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MACKENZIE VALLEY PIPELINE INQUIRY

IN THE MATTER OF APPLICATIONS BY EACH OF

(a) CANADIAN ARCTIC GAS PIPELINE LIMITED FOR A
RIGHT-OF-WAY THAT MIGHT BE GRANTED ACROSS
CROWN LANDS WITHIN THE YUKON TERRITORY AND
THE NORTHWEST TERRITORIES, and

(b) FOOTHILLS PIPE LINES LTD. FOR A RIGHT-OF-WAY
THAT MIGHT BE GRANTED ACROSS CROWN LANDS
WITHIN THE NORTHWEST TERRITORIES

FOR THE PURPOSE OF A PROPOSED MACKENZIE VALLEY PIPELINE

and

IN THE MATTER OF THE SOCIAL, ENVIRONMENTAL AND
ECONOMIC IMPACT REGIONALLY OF THE CONSTRUCTION,
OPERATION AND SUBSEQUENT ABANDONMENT OF THE ABOVE
PROPOSED PIPELINE

(Before the Honourable Mr. Justice Berger, Commissioner)

Yellowknife, N.W.T.

October 5, 1976

PROCEEDINGS AT INQUIRY

Volume 193



1 APPEARANCES:

2 Mr. Ian G. Scott, Q.C.,
 3 Mr. Stephen T. Goudge,
 3 Mr. Alick Ryder, and
 4 Mr. Ian Roland, for Mackenzie Valley Pipeline
 Inquiry;

5 Mr. Pierre Genest, Q.C.,
 6 Mr. Jack Marshall,
 6 Mr. Darryl Carter,
 7 Mr. J.T. Steeves, and for Canadian Arctic Gas Pipe-
 line Limited;

8 Mr. Reginald Gibbs, Q.C.,
 9 Mr. Alan Hollingworth,
 9 Mr. John W. Lutes, and for Foothills Pipe Lines Ltd.;
 10 Mr. Ian MacLachlan,
 10 Mr. Russell Anthony,
 11 Prof. Alastair Lucas and
 11 Mr. Garth Evans, for Canadian Arctic Resources
 Committee;

12 Mr. Glen W. Bell and
 13 Mr. Gerry Sutton, for Northwest Territories
 Indian Brotherhood, and
 14 Metis Association of the
 Northwest Territories;

15 Mr. John Bayly and
 16 Miss Lesley Lane, for Inuit Tapirisat of Canada,
 and The Committee for
 17 Original Peoples Entitle-
 ment;

18 Mr. Ron Veale and
 19 Mr. Allen Lueck, for The Council for the Yukon
 Indians;

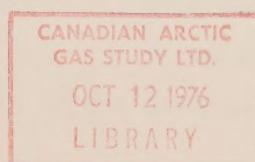
20 Mr. Carson Templeton, for Environment Protection
 21 Board;

22 Mr. David H. Searle, Q.C.
 23 for Northwest Territories
 Chamber of Commerce;

24 Mr. Murray Sigler and for The Association of Municipali-
 25 Mr. David Reesor, ties;

26 Mr. John Ballem, Q.C., for Producer Companies (Imperial,
 Shell & Gulf);

27 Mrs. Joanne MacQuarrie, for Mental Health Association
 28 of the Northwest Territori-
 29 es.



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Carson H. TEMPLETON

D. H. DOYLE

H. HERNANDEZ

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Yellowknife, N.W.T.

October 5, 1976.

(PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

MR. GOUDGE: I think we're prepared to begin, sir. The evidence for today will be Mr. Templeton and his two associates, Mr. Doyle and Mr. Hernandez.

Before they begin, sir,
let me just briefly for the record set out the rest
of the week, the schedule. We will complete this
panel today in chief and cross-examination.

Tomorrow I propose that we
begin with Mr. Butters, who is for the Municipalities
and didn't appear with their group last week. Mr.
Sigler advised me yesterday that they would be dis-
tributing Mr. Butters' evidence in chief today.

That will be followed by Mr. Hemstock of Arctic Gas dealing with the Arctic Gas contingency plan and their corridor evidence, and following that, there will be the Beaufort-delta people whose evidence I distributed to the parties yesterday. That's Wednesday.

Thursday and Friday we propose to devote to northern construction, beginning with the Foothills northern 50-mile panel, which Mr. Hollingworth has distributed, and concluding with the Arctic Gas panel, which was distributed yesterday. by Mr. Ziskrout. That would conclude the week.

In addition, I have a letter
that Dr. Bliss of the Environment Protection Board has

Templeton, Doyle, Hernandez
In Chief

written to the Inquiry on his own behalf and on behalf of Mr. Thompson. It arrived a couple of days ago. I would propose to table it. It deals with certain matters that he was asked about when he was here in January, comparing the environmental impact of the coastal and interior routes. It's his personal response, not a response, of course, of the Board. I would propose to table that and perhaps if any participants want copies, the secretary could make them and distribute them later today.

THE COMMISSIONER: Miss Carriere, I'd like a copy of that. Make sure you get one for me.

MR. GOUDGE: I think, sir, I can turn the proceedings over to Mr. Templeton, who will act as his own counsel.

MR. TEMPLETON: Mr. Commissioner, I would like to present first the need to be specific in the terms and conditions of the project, and next to talk about the recommendations for site specific terms and conditions in an Atlas, and then talk about the recommendations for a single agency, its key activities, manpower and schedule to control the Mackenzie Valley project, and fourthly, my recommendations for a land use plan, for the Western Arctic.

CARSON H. TEMPLETON, resumed:

D.H. DOYLE,

H. HERNANDEZ, sworn:

Templeton, Doyle, Hernandez
In Chief

1 WITNESS TEMPLETON: as a
2 consultant I frequently have to ask myself what the
3 client really wants. What are his basic goals in
4 regard to the matter on which he is consulting me?
5 And his goals are often not readily apparent. He is
6 often so steeped in the problem, he forgets to explain
7 the eventual goal that he wishes to reach or achieve.

What goals did the Government
of Canada have in mind when it set up this Inquiry?
The terms of reference said that you, Mr. Commissioner,
should enquire into the proposed pipeline activities,
and after doing so you should report upon the terms
and conditions that should be imposed upon the
pipeline company with regard to social, environmental
and regional economic aspects, having due regard to the
expanded pipeline guidelines.

17 Although it has not said so,
18 I think the goal of the Federal Government is to app-
19 prove the pipeline, but in doing so to protect the
20 social and environmental fabric of the north, to
21 enhance its regional economic fabric. If this is
22 true, then there are many things that must be done.
23 The recommending of the terms and conditions and the
24 incorporation of these terms and conditions into the
25 actual construction, operation and abandonment of the
26 pipeline are but a small part of the task of realizing
27 this goal.

Our job, as participants
of this Inquiry, however, is limited to recommending
to you, Mr. Commissioner, terms and conditions. But

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In Chief

1 this is the beginning, and let us each do it as well
2 as we possibly can because it is the basic material
3 for achieving the original goal. If we fail, others
4 will surely fail; and if others fail, we will all
5 have failed.

6 Hopefully, the Federal
7 Government will take your terms and conditions and
8 those of the National Energy Board and order the
9 successful applicant to obey them. It will be the
10 permittee's job to put them into effect and the job
11 of the Governments of Canada and of the Territories
12 to see that they are put into effect.

13 Our job, as participants,
14 is to outline for you our predictions as to the social,
15 environmental, and regional economic impacts of the
16 project on the north and to outline the terms and
17 conditions that will limit the impacts to those that
18 were predicted. How successful the terms and condi-
19 tions are will certainly depend on the dedication,
20 skill and knowledge of the permittee's forces and the
21 regulatory control staff, but it will very definitely
22 depend on the extent to which these terms and conditions
23 are themselves specific.

24 I have been involved in the
25 construction industry all my working life. In addi-
26 tion, Templeton Engineering Company has approved all
27 provincial gas pipelines in Manitoba from 1959 to
28 the present time on behalf of the Manitoba Public
29 Utilities Board.

30 From this experience I have

Templeton, Doyle, Hernandez
In Chief

1 gained a reasonable appreciation of the way the in-
2 dustry works and what is needed to control it.

3 When a contractor gives a
4 purchase order to a supplier, he does not ask for a
5 machine that will "maximize production". He wants a
6 specific machine and he wants it on a specific date
7 at a specific destination, and with certain
8 specific items such as a certain type of steel in
9 the side boom.

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Doyle, Templeton, Hernandez
In Chief

When a pipeline company orders pipe, he specifies in detail the metallurgical properties, the tests that will measure the properties he wants, the quantity of pipe, delivery dates, and the price he will pay. He does not say "good quality pipe delivered as soon as practical at a price to be determined later".

Yet many people expect to order environmental protection in general terms such as "minimize disturbance of fish spawning beds" or "avoid low flying over nesting geese areas". Sorry, I think I've said that wrong. I don't want you to say minimize the disturbance of fish spawning beds or avoid flying low over nesting geese areas because they are too general. The problem with such general terms and conditions is that the construction or transportation company employee does not know how to perform such requests. He does not know what is behind the request and he has no training to enable him to figure it out. In many cases, he does not care about the social or environmental problems. His job is to get the work done according to schedule.

Mr. David W. Norton, a biologist with the Joint State/Federal Fish and Wildlife Advisory Team, writing in a carefully considered article in the Summer/Fall 1975 edition of the Alaska Conservation Review said, "Alyeska management and senior engineers genuinely want this construction project to be an environmental model. But it does not necessarily follow that their personnel place enough emphasis on this aspect of the project, nor that they

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In Chief

have a clear idea of how to accomplish what we all want". He says this even though the Department of Interior Stipulations are quite specific, at least as far as they went. So, it will be with this project, whoever builds it. The construction people have not put environment protection on their list of important things. They will not read these transcripts, nor the exhibits. In the wintertime, they will not even recognize what some of the terms and conditions are all about because the effect of their actions will not show up until summertime.

They do understand clear, concise, written orders. Those are the tools of their trade. And they understand penalties, particularly when it looks like a regulatory body is going to envoke them.

The pipeline companies understand and are used to:
Code Z184, the gas pipeline code, and others.
Regulatory board orders.
Money budgets.
Time budgets.
Supervising contractors and suppliers.
Law.
General pipelining practice.

The contractors understand and are used to:
Plans.
Specification.
Time budgets.

Templeton, Doyle, Hernandez
In Chief

1 Money budgets.

2 Union agreements.

3 Being supervised for the quality of the product.

4 General pipelining practice.

5 The suppliers are used to:

6 Codes.

7 Purchase orders.

8 The transportation companies

9 are used to:

10 Government regulations.

11 Purchase orders.

12 The unions are used to:

13 Union-employer agreements.

14 You will note that in this
15 list nearly all of the items are formal documents.

16 You will also note that none of the items include
17 environmental considerations. Some day they probably
18 will but not today. But you will note that these
19 types of documents deal in specifics.

20 Some of the evidence seems
21 to indicate that the environmental inspectors can
22 magically produce in the field orders that will be
23 obeyed and will protect the environment. Miracles like
24 that do not occur. If the experts here in the quiet
25 comfort of these hearings cannot draft clear statements
26 of what should and should not be done, how can an
27 inspector be an instant expert in several disciplines
28 while he is being harassed by the bull-of-the-woods
29 construction superintendents, engineers, his own head
30 office to say nothing of the camp logistics problems,

Templeton, Doyle, Hernandez
In Chief

1 whiskey, friendships and other hazards that befall
2 and inspector?

3 I think we have a job to make
4 specific recommendations to you about dates, altitudes
5 of flights, velocities, distances, and specific do's
6 and dont's.

7 I recognize that nature does
8 not produce certain phenomena on exact dates, such as
9 freeze-up and break-up and that everytime you mention
10 a date for setting limits on an action, or a distance
11 to be maintained or an elevation to be adhered to,
12 that someone will be able to show you that that date
13 should not apply in all cases.

14 You sir, will be faced with
15 the choice between drafting specific directions that
16 can be criticized, or drafting non-specific directions
17 that will draw criticism only from those who will be
18 monitoring the success of the environment protection
19 measures.

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Templeton, Doyle,
Hernandez
In Chief

There are those who will say that if certain basic principles of environment protection are presented as terms and conditions, then those principles, plus the transcripts, plus the exhibits, will provide the information needed for the government inspector to administer the permit in the conditions that occur as construction proceeds. As a person who has spent his working life designing and supervising construction jobs, I disagree completely. The inspector has a very difficult job even with a specific set of terms and conditions. He is pitted against a construction operation that is highly organized, very large, very expensive and run by, of necessity, very forceful people.

To give the environmental inspector a set of 300 books and some general recommendations and expect him to be able to achieve environment protection is like putting a junior biologist into Imperial Oil and expecting him to sell management on gas production from pig manure.

In my opinion the terms and conditions must be specific. It is much easier to modify a specific recommendation than it is to create one once the wheels have been set in motion.

Finally, Mr. Commissioner, specific terms and conditions must be available at the outset. As soon as the permit is given the pipeline company will be making commitments, and ordering material. You may have read the press release of Canadian Arctic Gas noting their commitment to Steelco

Templeton, Doyle,
Hernandez
In Chief

1 for steel pipe. Supply contracts, construction contracts
2 and the transportation contracts must also be neg-
3 otiated and entered into.

4 If the environmental
5 terms and conditions are available before commitments
6 are made and if they are specific, they can be in-
7 cluded in the first draft of the contract or in the
8 purchase order. If they're not included initially,
9 arguments, delays, and demands for more money will be
10 made against the pipeline company. The pipeline
11 company in turn will harass the regulatory body for
12 having made such an unreasonable last minute demand
13 in the first place.

14 It is to the permittee's
15 advantage to know precisely what he has to do, and
16 what is acceptable and what is not acceptable and what
17 penalties are, if he does not do it.

18 Needless to say, it is
19 to the advantage of the Regulatory Agencies' staff,
20 as well, to have clear concise regulations to admini-
21 ster.

22 My purpose in requesting
23 the time to make this presentation is to plead for
24 each participant, including the applicants, to be as
25 specific as possible in defining the terms and con-
26 ditions for the project.

27 Now I would like to
28 turn to the second subject. I'd like to make some --
29 make some recommendations for site specific terms and
30 conditions.

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1 THE COMMISSIONER: Excuse

2 me Mr. Templeton. While I think of it. If my direc-
3 tion Commission Council and his staff under Dr. Fyle's
4 supervision are developing a comprehensive set of
5 terms and conditions that they'll make available to
6 all the participants including you in the middle of
7 the month. And then the proposal is, that, all the
8 other participants should develop their own terms
9 and conditions. I -- it's my suspicion that -- I
10 shouldn't put it in -- it's my surmise, let's not
11 say suspicion. That's a word with connotations that
12 aren't altogether happy. It's my surmise that it is
13 likely that only Commission Council will have developed
14 a comprehensive set of terms and conditions, but the
15 proposal is, that everybody should come back here on
16 November 8th for a week and challenge them, modify
17 them, shoot holes in them, support them, whatever
18 and I just wanted to make sure that you would -- you
19 would be coming back on November -- what is it --
20 November the 15th to participate in that exercise.

21 WITNESS TEMPLETON: These
22 would be available on on November the 8th and then --
23 the hearing would be on the 15th?

24 THE COMMISSIONER: No, the
25 Commission Council's terms and conditions. It's
26 difficult for me to tell everybody else to do these
27 things, but I've some limited control over the people
28 that work for me. The Commission Council recommenda-
29 tions should be out the middle of this month. Made
30 available to you and all the other participants and

1 made public and then on November 15th, we will come
2 back here and all of you can take a run at them. I
3 just wanted to make sure that you felt welcome and
4 felt entirely free to come back and participate in
5 that exercise.

6 MR. GOUDGE: I should say that
7 I spoke to Mr. Templeton about that this morning and
8 he indicated that he would be here.

9 WITNESS TEMPLETON: And he
10 asked that I not speak too long this time. Yes I'll
11 be back.

12 THE COMMISSIONER: Carry on
13 sir, sorry to interrupt.

14 WITNESS TEMPLETON:

15 In the construction
16 industry, a construction contract is an agreement
17 between the contractor and the owner which spells out
18 the responsibilities, payments, penalties, et cetera
19 of each party. To this agreement are appended general
20 conditions, detailed plans and specifications and codes
21 which define the quality required in the completed
22 works.

23 This convention is well
24 understood in the construction industry, and therefore,
25 if environment protection measures are to be most
26 effective, they should fit in with the convention as
27 closely as possible. The mass of environmental data,
28 recommendations, suggestions, orders, cautions and
29 concerns generated by these hearings can not be
30 assembled, interpreted and used in its scattered form

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Hernandez
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1 by the industry. And I realize, that you, Mr.
2 Commissioner, will translate this into terms and
3 conditions but I think we all have -- may have diff-
4 erent ideas about the detail that would be provided
5 in the terms and conditions. I recommend that your
6 terms and conditions include a general condition type
7 in a form similar to the Environment Protection Board's
8 Environmental Code in a regional and site specific
9 set of terms and conditions similiar to the atlas
10 that Mr. Hernandez will present shortly. Perhaps I
11 should spend a few minutes outlining these two forms
12 of terms and conditions and try to relate these to the
13 construction industry documents that are in common
14 usage. Because the pipeline industry is familiar with
15 construction codes, the introduction of an environ-
16 mental code is a practical way of including the new
17 environmental dimension needed in the project such as
18 this.

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This code should clearly set out in one document the level of performance required of the permittee and the mechanisms which the government intends to use to see that this performance is achieved. This code should provide a clear definition of criteria for, and standards of, environment protection. It should establish the framework within which the pipeline company can prepare its plans and specifications, draw up the construction and supply contracts, and order equipment, and should clearly establish performance levels expected of each party through every step of the process from planning and design through ultimate abandonment.

The Environment Protection Board's terms and conditions were written up in the form of an environmental code which spells out the general conditions that will, with proper administration of regulatory agencies, produce the quality of environmental protection that the Environment Protection Board thought necessary. Although I wish to amend this code somewhat in my final argument, it still expresses the general items that I urge you to include in your terms and conditions.

To relate this to the Construction Contract Convention that I mentioned at the outset, this environmental code is the equivalent of the general conditions appendix and the construction code appendix.

This environmental code outlines the general conditions for environment protection

Templeton, Doyle, Hernandez
In Chief

1 It does not contain site-specific recommendations.
2 The site-specific environmental recommendations that
3 should be included in the permittee's detailed plans
4 and specifications are contained in this environmental
5 atlas; and I urge you, Mr. Commissioner, to include
6 these in your terms and conditions.

7 This atlas has three major
8 components. It has an environmental base map illus-
9 trating the existing level of environmental information
10 for the proposed project areas. It has an overlay
11 illustrating the proposed project components with
12 flags to point out environmental concerns. And it has
13 a series of numbered recommendations that are keyed
14 to the flags and designed to reduce or eliminate
15 potential environmental impacts. Three types of
16 flags are used. General flags point out problems
17 generally applicable to the entire map sheet. Area
18 flags include problems applicable to the general area
19 over which the flag is placed, and site-specific
20 flags point out specific areas of concern.

21 This graphical approach to
22 presenting site-specific concerns developed by the
23 Environment Protection Board is, I believe, a practical
24 and informative way of summarizing the extensive
25 amount of project and environmental information for a
wide range of users.

27 Since the Environment Pro-
28 tection Board published their environmental atlas in
29 September, 1974, there have been numerous changes in
30 the project and environmental information. At least

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half the route originally proposed by Canadian Arctic Gas has been changed. Proposed facilities have been relocated, abandoned, or added; and the project proposed by Foothills Pipe Lines Limited has been referred to the Inquiry. In addition, much new environmental information has been presented through testimony and exhibits and new recommendations to reduce impact have been presented or existing ones revised as additional data were obtained and analyzed.

Because the 1975 funding of the Board was limited to attendance at the Inquiry, it was unable to fund a review and update of its atlas. So in December, 1975, the Northern Environment Foundation commissioned an update of the Environment Protection Board's atlas that would include site-specific recommendations for reducing impact on each of the proposed pipeline projects. The update was based on the current environmental and project information presented to the Mackenzie Valley Pipeline INquiry.

Our map sheet No. 1 covering the east side of the delta from Tuktoyaktuk to Inuvik can be used to illustrate the dynamic nature of the project and the extent to which the environmental information has changed from September, 1974, to September, 1976. Seven of the eleven site-specific flags have been changed on the updated atlas; six of these flags were shifted with the relocation of project facilities, and one was modified to indicate an area impact. In addition, five flags were added for existing concerns as a result of project relocations

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1 or additions, and two new site-specific concerns were
2 identified. I think this illustrates the magnitude
3 of the change that can occur on a project of this
4 scale and perhaps indicate that all revisions have not
5 even been made now.

6 I would like now to call on
7 Mr. Helios Hernandez to review five map sheets to
8 point out some of these changes in detail and to
9 illustrate the site-specific recommendations I suggest
10 the Inquiry adopt as part of their terms and conditions
11 for a Mackenzie Valley Pipeline.

12 These five map sheets of
13 Foothills' application, and some of Foothills' applica-
14 tion and some of CAGSL's, were chosen because of
15 terrain characteristics, and I urge you to adopt
16 the site-specific recommendations on all of the map
17 sheets, even though we'll only be using five for
18 illustration. I wonder if Mr. Hernandez then could
19 explain these five sheets?

20 WITNESS HERNANDEZ: Over the
21 past six years I have been involved in studies which
22 relate to this Inquiry directly or indirectly. These
23 are outlined in my resume along with a list of
24 publications as an appendix to the prepared text of
25 this panel's presentation.

26 To summarize this briefly,
27 I received a B. Sc. in biology from the Life Sciences
28 program at the University of Toronto in 1970 and an
29 M. Sc. in plant ecology from the University of Alberta
30 in 1972. I have been employed by Interdisciplinary

Templeton, Doyle, Hernandez
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1 Systems Ltd. in Winnipeg since 1973.

2 I have been involved in botanical
3 investigations of the natural recovery of plant
4 communities disturbed by oil exploration activities
5 (such as winter roads, seismic lines, and well sites)
6 in the Norman Wells area, the Mackenzie Delta area,
7 Tuktoyaktuk Peninsula, and the Yukon coast. I have
8 also been involved in revegetation studies in sites
9 in these areas excluding the Yukon coast but including
10 Prudhoe Bay, Alaska.

11 Many of these studies were
12 done as an employee of Interdisciplinary Systems Ltd.
13 under contract to the Environment Protection Board
14 for its impact assessment of the proposed gas pipeline.
15 My involvement included preparation of a vegetation
16 impact assessment for the Arctic Gas project in 1974
17 and providing input and background information to
18 the E.P.B. for preparation of its impact assessment
19 and its participation at this Inquiry. In this capacity
20 I have regularly been reviewing the Inquiry proceed-
21 ings.

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Templeton, Doyle, Hernandez
In Chief

1 Since January, 1976 I have
2 been summarizing the information presented at the
3 Inquiry to prepare map sets containing recommendations
4 for possible site-specific terms and conditions which
5 might be imposed as part of the pipeline approval.
6 It is this material which I will now present.

7 I would like first to discuss
8 how we went about developing the map sets and then I
9 would like to review in detail some site-specific
10 recommendations for the Arctic Gas project and the
11 Foothills project.

12 As Mr. Templeton pointed out,
13 the proceedings of the Inquiry have provided a great
14 deal of new information the environment, the project,
15 anticipated impacts and recommendations to reduce
16 impact since the publication of the Environment
17 Protection Board's atlas in September, 1974.

18 We used the following
19 guidelines in our review of the EPB atlas in relation
20 to current project and environmental information:

21 1. The EPB approach of
22 symbols for projects and environmental components and
23 flags for potential impacts was to be continued.

24 2. The orginal EPB atlas
25 base maps were to be used intact.

26 3. New project and
27 environmental information and impact flags were to be
28 protrayed on a clear overlay.

29 4. The EPB impact matrices
30 were not to be included in the new map series.

Templeton, Doyle, Hernandez
In Chief

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Templeton, Doyle, Hernandez
In Chief

1 of recommendations keyed to the flags on the map sheet.

2 There are three types of flags
3 in the overlays; general flags, area flags and site-
4 specific flags. The general flags are grouped in a
5 box and point out the concerns generally applicable
6 to the entire map sheet. The area flags indicate
7 concerns applicable to the general area over which they
8 are placed and site-specific flags have a flag pole
9 pointing to the specific area of concern. I would now
10 like to review in detail with you five map sheets
11 that are representative of the site-specific concerns
12 illustrated in the map sets. The exhibit itself, of
13 course, contains the site-specific terms and conditions
14 for all the map sheets of each proposed project.

15 First, map sheet ES-1 for the
16 Arctic Gas project. ES-1 or the first map covers the
17 area of the eastern Mackenzie Delta and adjacent
18 uplands east of the delta from Richards Island to
19 Sandy Lake, just north of Travallant Lake.

20 THE COMMISSIONER: Excuse me.
21 You and I are the only people with this map?

22 A These were all sent to
23 the participants with our evidence back in the middle
24 of August or the end of August and we had only a
25 limited supply. I brought up two of them. I guess
you got one and I got one.

26 WITNESS TEMPLETON: Do you
27 need those?

28 WITNESS HERNANDEZ: Not really.
29 WITNESS TEMPLETON:
Perhaps we could take Mr.

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Hernandez's copy and set it on the table so if anybody wanted to--

THE COMMISSIONER: Sure.

I was going to say, if any of you want to look over my shoulder, you're welcome.

WITNESS HERNANDEZ:

The first map for the

Arctic Gas project and the Arctic Gas and that consists, as I said, of a base map and clear overlay. The base map covers the area of the eastern Mackenzie Delta and the adjacent uplands east of the delta from Richards Island to Sandy Lake, just north of Travallant Lake. Numerous projects have been proposed in this region, as indicated on the map overlay. These include route and facility locations for the first 133 miles of the Mackenzie Valley portion of the pipeline proposed by Canadian Arctic Gas Pipeline Limited, as well as the last 23 miles, about MP 350 or 373 of the proposed cross-delta route.

Also proposed for the area shown on this map sheet are three gas processing plants: Taglu, Niglintgak, and Parsons Lake. I wish to stress, however, that we did not attempt to assess the impacts of these proposed gas processing plants because of the preliminary nature of these proposals and having insufficient details on which to make site-specific assessments. While some of the site-specific concerns will no doubt be similar to those for the pipeline, many others will be unique and require more information than we had available at this time.

People based in the settlements

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In Chief

of Tuktoyaktuk, Aklavik, Inuvik, Ft. McPherson, and Arctic Red River, at varying intensities; hunt, fish and trap the entire area covered by this map sheet, as indicated by the hunting and trapping and the accompanying description on the opposite page. The entire map sheet falls within either the Tuktoyaktuk and Delta Group Registered Trapping Area.

Now, general flags which apply to this map: Seven flags point out concerns which are generally applicable to this area and they're grouped in a box in the upper right-hand corner of the overlay.

The first general flag indicates a concern for the potentially serious effect of disturbance caused by overland traffic on thawed permafrost terrain. This flag is keyed to recommendation 26 on the facing page which states, "Except for emergencies, overland travel when the ground is thawed; spring, summer and fall, is to be restricted to permanent roads and adequate gravel pads because permafrost terrain is so easily disturbed and because of the serious consequences that can result from disturbance."

The second general flag illustrates the concern for effects of burning slash directly on the ground, even in winter. Recommendation 27 states, "Because the insulating surface peat layer is also burned off, burning of slash in the ground is to be allowed only when the area is to be dug up subsequently, e.g. borrow pit or ditchline, where

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bedrock occurs at the surface, or where the underlying permafrost is not ice-rich; otherwise burning sleds are to be used. In addition, fire contingency plan should be developed for extinguishing fires which are started by project activities and for protecting project facilities threatened by fires which have originated elsewhere.

The third general flag of the group points out a concern about the potentially serious effects of using cut-grading construction techniques in ice-rich terrain. Recommendation 28, to which this flag is keyed states, "Exposure of the ice-rich soil by cut-grading or damaged peat layer can lead to thermokarst subsidence, slumping and unsloping terrain to the formation of deep gullies, Fill-grading rather than cut-grading should be used".

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The next two general flags reflect a concern about the fire susceptibility of the various tundra and forested plant communities in this region. Both flags refer to recommendation 39 which states:

"All plant communities, except the wettest ones or those surrounded by water, are susceptible to fire, especially in the summertime. Therefore fire contingency plans should be developed for extinguishing fires started by project activities and for protecting project facilities threatened by fires originating elsewhere."

The sixth general flag points out the possible effects of construction activities on known and potential archaeological sites. This flag is keyed to recommendation 45 which states:

"The archaeological potential of proposed facility locations and route alignments should be investigated before construction begins. Should archaeological sites be encountered during construction, a professional opinion should be obtained on how to protect the site before construction is resumed."

The final general flag reflects concerns often expressed at this Inquiry regarding the possible effects that construction activities could have on hunting, trapping and other uses of the environment. Recommendation 60 states:

"A land use plan should be drawn up which

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1 accommodates and protects the native use
2 of the environment."

3 Next, area flags. Eight area
4 flags indicate concerns over portions of the map
5 sheet for the proposed Arctic Gas project.

6 Four of these flags are
7 scattered across the Mackenzie Delta along the bottom
8 of the map sheet. They illustrate the widely ex-
9 pressed concern about the effects of aircraft over-
10 flights on migrating, nesting, moulting and/or
11 staging ducks, geese and swans during spring, summer
12 and fall. These flags are coded to recommendation 1
13 which states that:

14 "Aircraft flight corridors should be routed
15 to minimize traffic over the Mackenzie Delta
16 and the tundra areas north of a line from
17 Reindeer Station to Sitidgi Lake from 15th
18 May to 15th October. Essential traffic
19 over this area should fly at altitudes of
20 at least 2,000 feet above ground level."

21 Another area flag has been
22 placed within the Kendall Island Bird Sanctuary within
23 which are proposed several construction activities.
24 This flag is keyed to recommendation 53, which states
25 that:

26 "All activities inside the Kendall Island
27 Bird Sanctuary require Canadian Wildlife
28 Service approval and control so that the
29 qualities for which the sanctuary was set
30 aside are not degraded."

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This same area of the outer Mackenzie Delta is known to be an important nesting, moulting and staging area for numerous species of birds, but especially for snow geese, swans, and ducks during spring, summer and fall. Numerous construction and related activities (such as barging, major river crossings, stockpiling), are scheduled for the outer Mackenzie Delta when the birds will be there. All of these activities combined could have a major impact as indicated by the flag keyed to recommendation 54. This recommendation states that:

"All ground activities in the outer Mackenzie Delta will have to be carefully controlled and inspected so as not to interfere with nesting, moulting, staging and migrating waterbirds."

The seventh area flag is located in the Parsons Lake area. The reindeer herd uses this area and construction activities are planned for the area. The potentially moderate impact could be reduced by the following recommendation 6, which states:

"Contact with reindeer herdsman should be maintained to prevent conflicts between the herd and construction activities."

And the final area flag occurs in the Dolomite Lake-Campbell Lake region south of Inuvik. The area supports a population of raptors which are sensitive to disturbance by aircraft overflights. The impact could be reduced by following recommendation 7, which states:

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"Aircraft traffic should be routed to avoid active eyries of raptorial birds from 1st March to 1st September. Traffic over any other areas of raptor nesting habitat during this period should fly at altitudes of at least 2,000 feet above ground level."

Now, site-specific flags for this map. Map ES-1 contains 17 site-specific flags denoting potentially major or moderate impact associated with various project activities at several specific sites.

Of these 17 site-specific flags, 7 indicate a concern with the known harmful effects of petroleum spills on many environmental components. The criteria used to determine whether a flag is warranted at a proposed fuel stockpile site involved in evaluation of

- (a) the sensitivity of the environmental components occurring around the stockpile site, and
- (b) the potential for the spill spreading elsewhere, if it occurs.

Based on these criteria, three stockpile sites have been flagged, the site at about Milepost 355 on the cross-delta route, the site near Tununuk Point, and the site near Inuvik. At all three sites one of the concerns relates to the possible effects on the abundant water bird populations which use the Mackenzie Delta for all phases of their life history, except over-wintering. At the cross-delta and Tununuk stockpiles, concern is also indicated for beluga whales which use

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Kugmallit Bay and Mackenzie Bay and for the tall shrub plant communities along the water-courses. In all cases the recommendation for reducing impact is the same, No. 2:

"All fuel storage areas should be set back at least 500 feet from water and dyked with impervious materials so as to contain 125% of the total capacity of all the tanks combined. Contingency plans for fuel spills should be prepared and necessary equipment made readily available."

The upland tundra areas of Richards Island and the Caribou Hills are known to be important grizzly bear habitat, and such bears are known to be attracted to kitchen garbage. As a result, three flags reflect the potential major conflict between bears and areas where people will be stationed for at least several years. The flags are located at compressor stations CD-08, at Tununuk Point, and at compressor station MD-01. The flags are all keyed to recommendation 3, which states:

"Areas where food or kitchen refuse will be handled should be protected by a bear-proof electric fence..Pipeline personnel should not be allowed to keep firearms."

This latter recommendation is made so that bears and other wildlife are not unnecessarily shot.

YaYa Lake (near Milepost 20) on Richards Island is a known local recreational and sports fishing area. The esker near YaYa Lake is

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also proposed as a major gravel source for many of the construction activities planned in the area. Care will have to be taken that the lake is not affected by borrow activities. In addition, recommendation 48 states that:

"Activities near local recreational areas should not alter the appearance of access to, enjoyment of or use of such local recreational areas."

Now the revised north-eastern boundary of the proposed Caribou Hills IBP site now includes about two miles of the proposed pipeline route (near Milepost 37), partly so that this area of the IBP site could be used to monitor the long-term effects of construction activities. The flag coded to recommendation 12 indicates there is still concern, however. Recommendation 12 states that:

"Pipeline construction may not be incompatible with this portion of the proposed IBP site, since this area may be used to monitor long-term effects of construction activity. However, care will have to be taken so that activities do not take place in areas of the IBP site designated either as reserves or as undisturbed controls for long-term comparison with disturbed sites. All activities should be approved beforehand by the agency in charge of the reserve, and in addition, all activities which are allowed should be well-documented so that data are available for

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evaluation of the effects of construction
later on."

The possible effects on
fish stocks of increased human access and uncontrolled
fishing by project personnel have been pointed out
throughout the INquiry. Some site-specific areas
which have been designated as sensitive include com-
pressor station MD-01, Peter Lake south-west of
Milepost 50, and a tributary to Campbell Lake, south of
Inuvik along the Dempster Highway. Recommendation 4
states that:

"Fishing activities should be monitored to
permit imposing restrictions in case the
resource shows signs of depletion."

The proposed Dolomite Lake-
Campbell Lake IBP site is intended as an inviolate
ecological reserve. Thus, flag recommendation 5
states that:

"Where an IBP site or part of an IBP site is
intended as an ecological reserve, construction
activities and all facilities must be located
outside its boundary."

The final site-specific flag
on map ES-1 is also related to the same proposed
borrow pit near Campbell Lake. This area is a known
major raptor nesting area (as discussed previously
in area flat 7). Recommendation 8 states that:

"All ground activities within a 2-mile buffer
zone of active peregrine falcon, gyrfalcon,
, golden eagle, or osprey eyries should be pro-

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hibited from March 1st to September 1st.

Any molestation of raptors by humans should
also be prohibited."

Next, map 1 for the
Foothills project.

WITNESS TEMPLETON: I guess
that's on another atlas.

WITNESS HERNANDEZ: That's
on another atlas, yes.

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One for the proposed

project proposed by Foothills Pipelines Limited covers the same area as Arctic Gases map. The concerns identified and recommendations to reduce impact applicable to this map sheet for the Foothills Project are similar in general but different specifics than those just described. Flags indicating concerns, generally applicable to the entire map sheet and area applicable concerns to the large portions of the map sheet are the same for both projects. Thus the recommendations for reducing impact are the same as those I presented a few minutes ago.

The site specific flags

however, differ. The types of concerns such as for fuel stockpiles, grizzly bear and garbage attraction are also applicable to the Foothills project but at different sites because of the difference in facility locations. Thus, fuel stockpile and handling concerns are flagged for Foothills at the proposed East Channel Crossing but not in the outer Delta since Foothills doesn't have a Cross Delta route. As proposed for the Arctic Gas project, the recommendation to reduce impact at fuel stockpile sites would be the same number 2, which states that all fuel storage areas should be set back at least 500 feet from water and dyked with impervious materials so as to contain 125 percent of the total capacity of all the tanks combined. Contingency plans for fuel spills should be prepared and necessary equipment made readily available.

Attraction of grizzly

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bears to areas where food and kitchen refuse are handled is identified as a concern at the camps associated with the crossing of the East Channel and at compressor I-01. As for Arctic Gas, recommendation 3 calls for fencing such areas with an electric bear-proof fence and prohibiting project personnel from keeping firearms so that bears and other wildlife are not unnecessarily shot.

Foothills also proposes to take gravel from the YaYa Lake esker, thus possibly affecting the local recreational use of the lake. And Flag recommendation 48 is the same as before. Activities near local recreational areas should not alter the appearance of, access to, enjoyment of, or use of such local recreational areas.

A concern applicable to Foothills but not to Arctic Gas is associated with the proposed East Channel crossing site near Holmes Creek, the location of a domestic fishing site. Recommendation 49 states that, construction activities near commercial fisheries should be located, carried out, and timed, so that fishing activities are not altered and so that the fishery itself is not impaired.

The routing proposed by Foothills does not cross the proposed Caribou Hills IBP site but it does cross the proposed IBP site and raptor nesting area around Campbell and Delomite Lakes. Recommendations 5 and 7 respectively, apply as presented previously for the Arctic Gas Project.

And there's one final dif-

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ference between the Foothills proposal and the Arctic Gas proposal which has recently arisen. The question of feasibility of winter construction in the northern portion of the route. I understand that this issue will be discussed later this week. This question has various implications for the site specific concerns which are identified and recommendations for reducing impact. However, lack of a sufficiently detailed project description made identification of specific conflicts difficult at the time the study was completed.

Thus, we were unable to make a more specific recommendation than area flag 54 regarding the cumulative effects of summer activities in the outer Delta. It states, that, "all ground activities in the outer Mackenzie Delta will have to be carefully controlled and inspected so as not to interfere with nesting, moulting, staging and migrating waterbirds."

A fundamental assumption of our assessment was that the project could be built as first stated by the engineers, namely in winter. If this assumption is incorrect, then the assessment is also incorrect and these recommendations to reduce impact may not be sufficient. Others may be needed.

The next map I'll discuss is map 4 for the Foothills project. Map 4 covers the Valley Mackenzie River/portion of the route from Oscar Creek about mile post 350 to the Saline River about mile post 480 and includes community laterals to Norman

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Wells and Fort Norman. The entire region is used to varying intensities for fishing, hunting and trapping by residents based at Fort God Hope, Fort Norman, Fort Franklin and Wrigley as indicated on the units and then on the overlay.

General flags. Eight general flags grouped in the lower left, generally apply to the entire map sheet. Six of these also appear as general flags to map ES-1 for both the Foothills and the Arctic Gas projects, and they reflected concerns about summer activities off adequate gravel pads about disposal of slash by burning it directly on the ground about the susceptibility to fire of the various forested plant communities, about archaeological sensitivity of the region and about conflicts with traditional hunting and trapping land-use activities.

The recommendations were outlined earlier and they apply here also.

One other general flag represents two concerns related to the disturbance of raptorial birds. They are keyed to recommendation 7 and 8. These concerns appear on map 1 as an area and a site specific concern respectively. On this map, however, they appear as a general concern because these rare and endangered species inhabit mountainous portions of the area.

The general flag coded to recommendation 31 is unique to this map sheet. It points out a concern for the effects of operation of the cold pipe in unfrozen terrain. In unfrozen areas

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of mixed lacustrine and deltaic deposits from Great Bear River to Big Smith Creek, differential heave of the pipeline is a possibility. Recommendation 31 indicates that installation of expansion loops could prevent overstressing the pipe and the environmental damage that could result from pipe rupture.

Area Flags. Five area flags are applicable to general areas of the map sheet. Three of these keyed to recommendation 10 are placed over or near islands in the Mackenzie River used in spring by migrating ducks, geese, and swans. Over-flights of islands in the Mackenzie River are a major concern throughout May until mid-June because the birds are sensitive to disturbance, including over-flights by aircraft. The islands north of Camsell Bend are critical to these migrating birds for resting, feeding and mating in open water areas around the islands.

Recommendation 10 states; "Aircraft traffic, except into established airports, should be prohibited within 2 miles of the Mackenzie River from Camsell Bend to Inuvik from 1 May to 15 June. Flights across this restricted zone should be direct, at altitudes greater than 2000 feet above ground level and should avoid river islands."

The two other area flags are keyed to recommendation 9. They indicate wetland areas west of Fort Norman and in the Brackett Lake area used by nesting waterfowl throughout spring, summer and fall. Here, was with river islands, aircraft overflights should be controlled. Recommendation

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9 states: "Aircraft flight corridors should be routed to avoid or minimize traffic over this wetland area from 15 May to 15 October. Essential traffic during this period should maintain a minimum above-ground altitude of 2000 feet.

Site Specific Flags. Six site specific flags are indicated on this map sheet. Two represent concerns at the fuel stockpile sites near Norman Wells and south of Fort Norman. They indicate the concerns for the effects of fuel spills on ducks, geese, and swans. In spring, birds are attracted to open water leads which appear near shorelines such as around islands. A fuel spill is known to resemble such open water leads and attracts birds. At other times of the year, a spill would foul the habitat on which birds depend for migration and nesting. As a result, all fuel stockpile sites should be adequately and effectively dyked and effective fuel spill contingency plans should be prepared and implemented as detailed previously in recommendation 2.

Canyon Creek has been identified as the major concern for the effects of siltation resulting from borrow activities. Recommendation 13 states that local drainage should be carefully controlled to prevent washoff from construction areas into this stream.

Nota Lake, mile post 405 has been identified as a lake where uncontrolled fishing could affect fish stocks. As described

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through ES-1 previously, recommendation 4 calls for monitoring fishing activities to see if restrictions should be imposed.

The boundaries of the proposed Brackett Lake IBP site have been drawn to include about 5 miles of the proposed pipeline route and highway. This part of the site is intended as an area for monitoring the effects on construction and operation of the highway and pipeline. The area has been flagged with recommendation 12, as was the Caribou Hills IBP site on map ES-1 for Arctic Gas. To indicate that care will still be needed to ensure that construction activities do not take place in areas designated as undisturbed controls or as inviolate areas. In addition, all activities should be approved beforehand and should be thoroughly documented so that the data are available for later evaluation of the effects of construction.

Oscar Creek has been identified as one of the areas along much of the Mackenzie River and its tributaries used by moose as access to winter range or as an actual winter range. Recommendation 11 states that, "construction and human activities near moose overwintering range should be carefully controlled. Pipeline personnel should not be allowed to hunt. To prevent illegal hunting, firearms should be prohibited.

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The next two maps will be back on the Arctic Gas project and they'll be the last two I'll present. Map No. 4 for the Arctic Gas project as I've just described for the Foothills project. The general area concerns are the same as those discussed for map 4 for the Foothills project and the nine site-specific flags in the Arctic Gas map sheet reflect the same concerns as previously presented for Foothills but in some cases at different sites.

Compressor stations M-08, M-09 and M-10 are flagged to indicate concerns for fuel handling and stock piling and to indicate possible conflicts of construction of moose on their winter range near these compressor station sites.

The other three site-specific concerns are the same as for Foothills; siltation at Canyon Creek, effects of uncontrolled fishing at Nota Lake and crossing of the proposed Brackett Lake IBP site.

The last map I'll present is map sheet ES-11 for the proposed Canadian Arctic Gas Pipeline Limited project. This is the one that covers the interior alternate route. This map covers the interior alternate along the Porcupine River from the Alaskan/Yukon boundary, MP 297, to the Yukon/N.W.T. boundary, MP 435. The people of Old Crow hunt, fish and trap the area covered by this map to varying intensities. People based in Aklavik, Inuvik and Ft. McPherson also use the eastern portion of the map area. The entire area in the Yukon, however, forms part of the

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Old Crow Group Registered Trapping Area.

General flags: Eight general flags apply to this map sheet. Of these, one is specific to the map sheet. The other seven have been previously discussed for maps ES-1 and ES-4. These seven flags point out concerns about summer overland travel off adequate gravel pads, recommendation 26; disposal of slash by burning it directly on the ground, recommendation 27; disturbance of raptorial birds by aircraft overflights, recommendation 7; and ground activities, recommendation 8; fire susceptibility of vegetation, recommendation 39; archaeological sensitivity of the area, recommendation 45; and conflicts of hunting and trapping land use activities, recommendation 60.

The general flag specific to this map sheet indicates a concern for terrain disturbance and is keyed to recommendation 38 which states, "Geotechnical data indicate that the lacustrine deposits are ice-rich. Areas underlain by them thus have high potential for active layer detachment and thaw flow slides. The alluvial deposits can contain massive ice up to eighteen feet deep. Cut banks in these deposits could be subject to extensive flow slides. When banks must be cut, they should be protected by armoring or insulation".

Area flags. Five area flags apply to this map sheet. Two flags indicate that the proposed route crosses the proposed Old Crow IBP site and a subsite within it. This site appears to be

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incompatible with pipeline related disturbances. It's the intent of the Committee that recommends the IBP site to be followed. Thus recommendation 5 indicates that the pipeline should not be located within it if it is to remain undisturbed.

Migrating caribou are susceptible to disturbance by low flying aircraft. A flag key to recommendation 24 near MP 320 states, "To prevent injury and disturbance or caribou, aircraft should fly at altitudes greater than five hundred feet above ground level".

The southern Richardson Mountains are also important Dall sheep range. The area flag keyed to recommendation 23 indicates that these animals are sensitive to noisy disturbances such as aircraft overflights. Recommendation 23 states, "Aircraft traffic over Dall sheep range should fly at altitudes of at least two thousand feet above ground level. Noisy facilities should not be permitted to operate within two miles of wintering or lambing areas of Dall sheep".

The last area flag is the Old Crow Flats are a major waterfowl area. Recommendation 25 states, "Aircraft flight corridors should be established to eliminate the traffic over the wetland areas of the Old Crow Flats from 15 May to 1 October. Emergency traffic should fly at altitudes of at least two thousand feet above ground level over the Old Crow Flats during this period. Ground activities should be prohibited on the Old Crow Flats

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from 1 June to 1 October".

Site-specific flags: The seventeen site-specific flags on this map sheet fall into five types; interference with caribou migrations, fuel stockpile sites, attraction of grizzly bears to garbage, siltation of streams and domestic fishing.

Six flags, numbered 21, are scattered along the proposed routings since the entire area of this map sheet is generally crossed by caribou during spring and fall migrations. Conflicts with migrating caribou can be prevented by following recommendation 21, which states, "Caribou migrations should be monitored during the years of construction to give advance warning of the approach of animals so that the construction spread can be shut down, and the ditch filled. Strung pipe should be turned parallel to the direction of travel of the caribou".

The three proposed fuel stockpile sites at MP 330, 390 and 420 have been flagged as recommendation 2, since mature riverbank spruce communities along water courses are of limited extent on this map sheet. All fuel stockpile sites should be set back at least five hundred feet from water and dyked with impervious materials so as to contain 125 percent of the capacity of all tanks combined. Contingency plans should be prepared and necessary equipment made available.

Grizzly bears may be attracted to garbage at compressor stations IA-08, IA-09 and IA-10. Recommendation 3 calls for these areas to be protected

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by bear-proof electric fences. In addition, pipeline personnel should not be allowed to keep firearms to prevent needless killing of wildlife.

Two stream crossings, MP 305 and 392, have been identified as moderately sensitive to siltation. Therefore recommendation 13 states that wash-off from disturbed construction areas should be prevented from entering these streams.

Compressor station IA-09 and its associate borrow pits and stockpile sites is located near a domestic fishing site. Flag recommendation 42 calls for construction activities near such domestic sites to be "located, carried out, and timed so that fishing activities are not affected, and so that the fishery itself is not impaired".

This concludes my presentation.

Thank you.

WITNESS TEMPLETON: Mr.

Hernandez has explained the essential points of five map sheets to illustrate how the atlas can be used to present site-specific impacts and recommendations. Two completed atlases were prepared so that when and if a permit is issued, there will be an atlas for that project.

You will notice that the atlas makes recommendations and uses the word "should". On the other hand, the Code is much more specific and often uses the command "shall". The reason for this is because I believe, as did the Environment Protection Board, that the environmental specifications need to be

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drawn up with as much detail as the engineering specifications. Canadian Arctic Gas and I presume Foothills too agree that the specifications cannot be drawn up now until the project has been designed. These site-specific recommendations would be needed when the design is being made and then the "shoulds" could be changed to "shall".

The atlas is a useful tool for the regulatory agency to check the detailed designs against because it gives, by means of flags and symbols the reasons for its recommendations.

This Inquiry has, in my opinion, been an outstanding success in public participation and in the acceptance of its methodology by the public. I'm sure that the general terms and conditions will likewise be acceptable but I worry about some of the smaller things. For example, how will the small dot on the map which is insignificant to the project be recognized as a spring fishing lake and a food supply for a community? The attention given to these site-specific recommendations can make the project acceptable or not acceptable in the perception of many people.

Confucious said, "Men do not stumble over mountains, but over molehills". In the hopes that we will note stumble over site-specific impacts and recommendations, I present these two atlases for the project.

THE COMMISSIONER: Thank you,

Mr. Templeton.

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1 MR. GOUDGE: I wonder, sir,
2 if we could break for coffee and consider the last
3 remarks.

4 THE COMMISSIONER: Yes, reflect
5 on that sage advice from Winnipeg.

(PROCEEDINGS ADJOURNED FOR A FEW MINUTES)

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(PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

THE COMMISSIONER: O.K.

MR. GOUDGE: Before we

resume, sir, I suggest that he's indicated to me
that he would like to conclude his presentation with
a land use plan evidence, which is Part III of his
prepared evidence, and I suggest that it might fit
in well with our schedule if we could attempt to
complete Part IV now and then break for lunch, if that
suits you. Part IV is Mr. Doyle's part.

THE COMMISSIONER: O.K.

MR. TEMPLETON: I'm not sure
that Mr. Doyle can finish in that time, but --

MR. GOUDGE: Perhaps we
could begin and see how we get along.

WITNESS TEMPLETON: Mr
Commissioner, I would now like to introduce Mr. Derek
Doyle, who will present the findings of a study team
that he directed. The study was commissioned by Mr.
Pick of the Environment Protection Service of the
Department of Environment in Edmonton during the period
January through March, 1976. I believe the study gives
a practical perspective on what the key activities
of a single agency are, the manpower that will be
required, and the timing for acquiring these resources,
and a possible management strategy for bringing the
agency into existence.

Before Mr. Doyle starts, I
would like to record -- to express my thanks to the
Environmental Protection Service for allowing Mr. Doyle

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1 to present these findings here today.

2 I wonder if Mr. Doyle would
3 give a brief summary of his qualifications?

4 WITNESS DOYLE: Mr. Commis-
5 sioner, I hold a Bachelor of Engineering degree in
6 mechanical engineering from the University College,
7 Dublin, Ireland. I am a member of the Professional
8 Engineers Association of Manitoba. I hold a certi-
9 ficate in business management from the University of
10 Manitoba where I am continuing graduate studies in
11 business management.

12 From 1963 to '65 I held
13 various industrial engineering positions in Ireland and
14 Norway, and from 1965 to 1970 I held plant engineering
15 positions with Building Products of Canada Ltd.

16 From 1970 to 1975 I held
17 various positions with Templeton Engineering Company
18 and Interdisciplinary Systems Ltd. In particular my
19 duties involved corporate administration, project
20 planning, impact assessment and program direction.

21 I am currently general manager
22 of Interdisciplinary Systems Ltd.

23 I'd like now, Mr. Commissioner,
24 to present the study I directed for the Environmental
25 Protection Service of the Department of the Environment
in Edmonton.

26 Just to give some background
27 on this presentation, the purpose of this presentation
28 is to provide an understanding of what is involved in
29 the establishment of a single government regulatory

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1 agency to control from an environmental perspective
2 the Mackenzie Valley gas pipeline project north of
3 latitude 60 degrees north.

4 When I say "from an environ-
5 mental perspective" I want to make it clear that this
6 does not take into account the traditional control
7 and inspection function carried out by the National
8 Energy Board on such projects. The normal N.E.B.
9 requirements would have to be dove-tailed with the
10 recommendations which will be presented.

11 Based on the assumption then
12 that a single agency would control the project, we
13 were retained by Mr. Pick of the Environmental Protec-
14 tion Service, D.O.E., Edmonton, to assess the applicants
15 schedules, to identify the key activities for the
16 agency, its probable resource requirements and the
17 timing for acquiring the resources.

18 It was recognized that there
19 were two aspects to determining the organization and
20 staffing that would be needed. First, the level of
21 control would have to be defined for the project,
22 and second, the project schedule would have to be
23 clearly understood. By bringing these two matters
24 together, it would be possible to define key activities
25 for the agency, the manpower required, a schedule, and
26 an organizational mechanism to establish the agency.

27 To provide an overview of
28 this presentation I will commence by summarizing our
29 general findings.

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1 Valley gas pipeline project will be an enormous task
2 -- one that is difficult to conceive, let alone put
3 into practice.

4 If an agency is to meet
5 the challenge, it must accomplish three key
6 activities. First, it must prepare regulatory
7 documentation well in advance of the pipeline
8 company's submissions so that the company can comply
9 with the agency's regulations in their plans, designs
10 and schedules.

11 Second, it must conduct preliminary
12 and final design reviews to ensure that the designs
13 and plans of the company are environmentally sound.

14 Third, it must put a team of trained
15 inspectors in the field to inspect pre-construction
16 and construction activities.

17 The agency will need to
18 get started early if it is to accomplish these
19 tasks. Two years before any construction starts, a
20 core group of eight persons should be formed to es-
21 tablish broad policies, objectives, and procedures.
22 Six months later, nine senior staff should be added
23 to the agency to spearhead the preparation of codes,
24 stipulations, guidelines, detailed procedures, manuals,
25 and other regulatory documentation -- the tools of
26 the job. Nine months before construction starts,
27 design review staff peaking at 60 persons in various
28 disciplines will be needed to examine submissions by
29 the pipeline company. Finally, up to 40 inspectors with
30 support from specialists when necessary will be

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1 required to inspect the staggering number of pre-
2 construction and construction activities, many of
3 which will be occurring simultaneously at several
4 locations along the route.

5 The advantage of this multi-
6 phase approach is that it will see the gradual
7 accumulation of staff starting with a handful of
8 personnel. This would allow the agency to take care of
9 the important documentation and review activities
10 before project approval in an unobtrusive manner, yet
11 still enable it to be in a position to achieve environ-
12 mental protection if the project proceeds.

13 The first aspect I'd like
14 to look at now is project schedule.

15 The schedule of construction
16 activities for the Mackenzie Valley gas pipeline
17 north of 60 degrees is an awesome one. The actual
18 pipe-laying on any one construction segment will be
19 preceded by 18 months of site preparation and con-
20 struction activity required to build wharves, camps,
21 roads, and airstrips. When pipeline installation
22 starts, 800-man crews could be at work at as many as
23 four different locations along the valley, simultaneously.
24 In the meantime, clearing and other preparatory
25 activities will be active at four other spreads.
26 Station construction, once it begins, will proceed
27 year-around. Major river crossings will be installed
28 in summer, while a diversity of other activities is
29 going on, such as depositioning of fuel and pipeline
30 supplies. In short, once construction starts, it will

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1 continue throughout the project area year-around
2 for five years. The schedule of pre-construction
3 activities is proportionately immense. A tremendous
4 range of decisions and commitments must be made before
5 any construction begins. The types of equipment,
6 seasonal limits, and environmental constraints must
7 be decided upon. Sites for borrow pits, stations,
8 and wharves must be investigated and finalized.
9 Access to do these investigations must be gained.
10 Designs, specifications and contract documents must
11 be prepared. And most of these pre-construction acti-
12 vities carry serious environmental implications for
13 the project.

14 An understanding of both
15 the pre-construction and construction activities is
16 essential for those who would control the environmental
17 impact of this massive endeavor.

18 The information which we
19 had available comes from the applications of CAGPL
20 and Foothills to DIAND, N.E.B., and the proceedings
21 of this Inquiry.

22 Since some information is
23 available on project scheduling -- excuse me, since
24 more information is available on project scheduling
25 from CAGPL than from Foothills, we will lead off our
26 discussion of various aspects of the project by
27 referring first to CAGPL and then to showing the
28 slide of the Foothills project. We have also dealt
29 with construction activities first, because pre-
30 construction activities only assume their full

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1 significance when viewed in the light of what could
2 happen if construction activities were allowed to
3 begin without any preliminaries.

4 Construction activities.

5 Throughout this presentation we will be referring to
6 certain figures. These figures are found in the
7 report:

8 "Assessment of Environmental Protection
9 Activities of the Mackenzie Valley Gas
10 Pipeline Project."

11 This is a policy and planning report of E.P.S. No.
12 2 NW-76-1 and will be entered as an exhibit, and from
13 which this script was prepared.

14 Now you're all familiar
15 with the project. I'd just like to recap for a few
16 minutes. Let us look at figure 2 as shown on the
17 screen.

18 "CAGPL Construction Schedule Spread A
19 (between Milepost 0 and Milepost 133)".
20 The project components have been broken down into
21 surveys, support facilities, construction, pipeline
22 construction, compressor and meter stations, and
23 operations and maintenance facilities.

24

25

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Figure 2 gives some perspective of the frequency and duration of pipe installation activity in relation to other activities. Pipe installation occurs only at the beginning of year three and year four, note the arrows, in the midst of considerable construction activity on this spread from early in year one, right through to the middle of year four.

The next two figures present the overall--

THE COMMISSIONER: Sorry. No point in rushing through these. This is from the border to--

A This is from Richards Island, MP 0 to MP 133. It's a typical spread schedule. Starting at the top, the first activities, we have surveys. Now, we've used the nomenclature year one to indicate the commencement of the field construction activity. So, you can see in the top of the figure that there are location surveys going on and they're followed by construction surveys.

Q No, I'm just looking at the distribution of activities throughout the year. That pipeline, as you know, -- It's been some time, perhaps a year since we looked at one of these things here and I'm just trying to get back into it. That's all.

A These figures are shown in this report, which is on your desk, I believe, and that figure, figure number two--

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Q Well, is the report you
did for DOE?

A Right.

Q Right.

A That too appears at page
eight.

Q Now, just so I'm with
you--

A I might indicate that the
source of this material came from the Canadian Arctic
Gas Pipeline Company Limited; their construction plan
under Section 13A of their exhibit.

Q Yes, I remember we saw
these bar graphs when they produced them themselves
which, as I say, is more than a year ago now. Okay,
well carry on. I'm with you.

A We move on now to figure
3A which is on page eleven of the report referring to
the information shown on this chart. It demonstrates
when each of these project components were commenced
for the total project and the length of the bar line
indicates the total duration of that activity. Again,
the top of the chart indicates year one through year
four. It can be seen that line location surveys are
completed early in construction. Construction surveys,
on the other hand, are almost continuous. Wharves are
being constructed in the summers of year one, year
two and year three. Borrow and concrete work is
continuous, except during break-up. Clearing, which
occurs in three winters, precedes pipe installation by

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1 a year. Two winters of clearing are for construction
2 along the Mackenzie Valley and the third is for the
3 connecting alignment to Prudhoe Bay. Station
4 construction, once it commences, is continuous and
5 will also continue into the operational phase of the
6 project as more stations are built to increase the
7 throughput of the pipeline. Thus, throughout, there
8 is a great diversity of activity.

9 Referring to the Foothills
10 Construction schedule, slide 3B, it is apparent that
11 scheduling was only of a very preliminary nature when
12 we undertook this study. Arrow one shows that all
13 camps, permanent roads, airstrips and pads are
14 scheduled for completion in the first winter, even
15 though borrow activities, shown at arrow two, will
16 continue throughout the next five years.

17 All station site preparation
18 will be completed in the first winter, arrow number
19 three. This schedule compels the conclusion that
20 the scheduling information we had from the Foothills
21 application was at that time of a preliminary planning
22 nature.

23 Q Excuse me. Where are
24 you? I just ran out on page 4-9.

25 A I'm sorry. I'm on page
26 twelve and I follow the copy in that report.

27 Q Okay.

28 A Commencing the second
29 paragraph. Recognizing the diversity in duration of
30 construction work, we felt that another way to convey

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the magnitude of what would be occurring would be to break activities down by construction spread rather than project components.

Given this approach, we divided construction activities into four categories. Perhaps I could have the next slide. I'd refer you to the chart shown on page fifteen of the report. The four categories were surveys and site investigations, clear, grade and support construction, construction and mobilization, and restoration and revegetation.

The most useful geographic differentiation of the route was to consider the Mackenzie Valley and the Prudhoe Bay connections as major routes of spread and then to divide each of these into individual spreads and sections within spreads. We felt that construction activities for each spread in the two major portions of the route would give a clear picture of what was gong on at any particular time or location north of sixty degrees. The result is shown as figure four.

Diversity of construction activity north of sixty degrees for CAGPL Singled out are the four most significant components of the project. These are shown in the legend at the bottom of the figure. Namely access roads or airstrips, shown in red; borrow material and stockpiles in blue; compressor stations in brown and the pipeline installation itself, green.

As an illustration of how this chart can be used, note the column under February, year

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1 three. It's indicated by an arrow. If we just read
2 from the top of that figure down below the arrow, we'll
3 note that surveys and site investigations are nearly
4 complete for the pipeline and facilities at one segment
5 of all the spread from Inuvik to Fort Simpson.

6 At the same time, in February
7 of year three, clearing and grading of the right-of-
8 way is active on the same spread segment. Roads,
9 airstrips, barrow stockpiling and station pad
10 construction are also in full swing on these spread
11 segments. Mainline construction will be under way on
12 the other segments of spreads A to E. Also the
13 Great Bear River crossing on spread C will be underway.
14 Finally, restoration will be following behind
15 pipeline construction on a number of spread segments.

16 A major point is clear from
17 figure four. While mainline construction is going on
18 along one-half of the eight hundred miles, a
19 considerable diversity of environmentally significant
20 activities for other components of the project is going
21 on over the other half of the eight hundred miles.

22 Figure four also shows what
23 is occurring at any point in time, which is particularly
24 important for estimating and organizing manpower
25 requirements for environmental inspection. This figure
26 forms the basis of our first look at the size of the
27 inspection staff that will be required.

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Pre-construction activities.

In the total absence of information on pre-construction or planning activities for the project, we have drawn upon our knowledge of engineering projects to put together a realistic but tight schedule for the many activities that must precede actual field construction.

In preparing this schedule, we have divided pre-construction activities into the following categories.

These categories are shown at the bottom of the slide:

- Preparatory investigation and design
 - Final design
 - Specification preparation
 - Tender evaluation and award of contracts, and
 - Mobilization.

The choice of categories

is based on several assumptions.

1. Is that considerable effort will have to be expended in preparatory field investigations and preliminary design before final design can be arrived at.

. Another is that detailed specifications must be prepared for all contracts before they can be put out to tender.

We assumed that much work could be done on a cost-plus basis with contractors since this would allow for the most expeditious scheduling of activities for project management. However, specifications would still need to be prepared to govern the contractual arrangements. Whether contracts are bid on a cost-plus or fixed

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1 job basis, it will be necessary to provide for a
2 tender period, for subsequent evaluation of all tenders
3 received, and for final negotiation leading to the
4 actual award of major contracts. IT is only when a
5 contract has been awarded that a contractor can
6 commence mobilization of resources in order to carry
7 out the work.

8 In preparing the schedule
9 presented in this figure and the subsequent figure,
10 which is for Foothills, we were careful to dove-tail
11 pre-construction activities with construction work
12 on the assumption that the project would be proceeding
13 on a tight schedule. For example, if we look at
14 arrow 1, it points out that pre-construction activities
15 for wharves would need to commence seven months before
16 any construction could start. We arrived at this
17 figure by dove-tailing and overlapping activities.
18 In short, by taking a pipeline or perspective.

19 Preparatory investigations
20 or designs would be prepared at the same time as
21 the specifications were being drawn up. This assumes
22 that the contracts would be awarded on a cost-plus
23 basis, which would save time by allowing the tendering
24 of the work, the evaluation of the contractors' bids,
25 and the award of the contract to occur while actual
26 investigations and final design were being carried
27 out. It also means that the contractor could mobilize
28 his resources and receive final design details when
29 on-site. If all activities were to be sequential, as

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in the case of mainline construction, then the investigations would be followed by final design, separation of specifications, tendering, evaluation, contract award, and finally mobilization. This latter process would take considerably more time. Thus our examination of probable scheduling of pre-construction activities is based on a tight project schedule.

Figure 5-A shows the construction activities commencing in year 1 must be preceded by up to one year of pre-construction activity. Station construction, which commences in year 3, will be preceded by up to two years of design work with site-selection being finalized before that. Clearly, plenty of time, in some cases a great deal of time must be set aside for pre-construction activities.

The final point to be made about figure 5-A is that it applies to preparations leading to the first season of pipe-laying and would thus apply all over again to preparations for the next two seasons of pipe-installation. This fact becomes significant later when we are examining manpower requirements for design review. A number of people have wondered if agency staff would be involved in preliminary activities and would later be available for field work. The answer at this point is, "Partly so." But people will still be required for continuing design reviews and approval.

We will return to this subject in a more detailed analysis of pre-construction

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activities later.

Operation and maintenance activities. The information available on operation and maintenance activities is of a general procedural nature. Section 13-B of CAGPL's application points out that stations will operate unattended. The right-of-way will be regularly patrolled by aircraft, weekly at runoff, otherwise monthly. The pipeline maintenance will be scheduled for wintertime. If winter maintenance is not possible in emergencies, then helicopters or low ground pressure vehicles will be used. Snow roads or sleigh trains will be used to bring in supplies or to gain access along the right-of-way for maintenance. Fire-fighting equipment will be located at station sites and should fire occur at outside pipeline lands, the application states that these resources would be available to assist local operations.

Let me conclude then our review of the project schedule. The construction schedule for this project as currently proposed will result in almost continuous field activity along the Mackenzie Valley, and in the Northern Yukon for four years. Much of this activity will be year-around and will not be confined to any one geographic location.

THE COMMISSIONER: Excuse me, Mr. Doyle. Do you assert that there would be continuous field activity in both the valley and the Northern Yukon, that is in each area for four years?

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A There is a sequencing there, Mr. Commissioner, between the valley. Like the valley in the case of CAGPL will be constructed first, and then the --

Q I'm aware of that.

I'm well aware of that. I'm just saying, are we to -- you're not then alleging that an analysis of CAGPL's activities reveals that there will be almost continuous field activity in the Northern Yukon for four years?

A No sir. In the case of the Northern Yukon it would be for two years, one during the preparation phase, and one during the actual construction phase.

Preceding and concurrent with these construction activities there will be three years of continuous pre-construction, design, site conformation, specification preparation, and the drafting of contracts in preparation for each of the winters of mainline construction.

In preparing this pre-construction schedule, we have assumed that some work could be done on a cost-plus basis. This gives the tightest construction schedule and thus saves time. However, this assumption, while being valid for the purposes of this report, may not be appropriate in final planning. This Inquiry will undoubtedly produce terms and conditions that apply to the applicants, their contractors, sub-contractors, suppliers, transportation companies, and the like. These terms

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1 and conditions may well recommend a thorough review
2 and approval of all construction plans, schedules,
3 designs and contracts, and thus considerably extend
4 the time required for pre-construction activities.

5 I would now like to turn to
6 the key activities for control from an environmental
7 perspective.

8 The key activities required
9 for achieving environmental control on this project
10 can best be appreciated by working backwards from
11 the actual construction plan. Environmental inspec-
12 tion of mainline activities performed by a team of
13 trained inspectors, aided by comprehensive manuals,
14 is obviously a key activity. But for it to be
15 effective it must be preceded by two other key
16 activities:

17 . An initial review and approval of preliminary
18 designs, plans, etc., and following that,

19 . A final review and approval of final designs,
20 specifications and tender documents prepared by the
21 pipeline company.

22 These activities would
23 ensure that all plans and schedules were environmentally
24 sound and thereby make it possible for the field
25 inspectors to do an effective job.

26 Preliminary and final reviews
27 would in turn need to be preceded by a fourth key
28 activity -- preparation of guidelines, stipulations
29 and codes. The pipeline company should have these
30 regulatory documents in hand well in advance of their

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1 submission of plans, designs, and schedules, so that
2 these documents can be in maximum compliance with the
3 regulatory documents. If regulatory documents are not
4 prepared, then there will be no defined basis against
5 which the designer's views can take place. Such a
6 situation would greatly hinder the effectiveness of
7 any environmental control program.

8 Key activities such as
9 preparing regulatory documentation and conducting
10 reviews and approvals will require considerable lead
11 time, but this, we believe, is essential if environ-
12 mental control is to be achieved on the project.

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Pre-construction. When detailed construction plans and schedules have been prepared without regulatory review and approval it is highly unlikely that the project field procedures and schedules of the company will automatically meet the aspirations of regulatory authorities charged with protecting the environment.

As a result, field inspectors would be confronted with awesome costs and schedule implications for any significant rulings they might deem necessary.

For example, consider an early spring thaw that could cause deterioration of snow or ice roads. Inspectors would be faced daily with decisions on terminating travel or removing ice bridges. The implications of such delays to project costs, to project management and to Canada would be substantial. It is evident that schedules, procedures and contingency plans should be established and agreed to before such situations develop.

consider
As another example,/what
could occur at many of the watercourses to be crossed.
Because of steep banks at a crossing location, the
company's project design may call for a substantial
cutting and grading of river banks, environmentally
unwise in most cases. Inspectors would be confronted
with powerful arguments as to why changes in the plan
could not be made. Changes could require redesign
of the crossings, something that would have to be
done in a distant office. The resulting delays could

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cost millions, interfere with testing progress, delay restoration and so on. Or, again, an inspector might find himself at a borrow^{pit} confronted by a potentially detrimental situation. He might ask the local operator to cease operations for a time, only to hear that the operator, from the operator, that his contract is to deliver X yards at P dollars per yard to a stockpile size. He has obtained a permit and he can not stop with jeopardizing his contract or the subsequent construction activities that depend on his completing his contract on schedule.

If a work stoppage were required to allow investigation of a non-covered archaeological site for example, inspectors would probably meet with little co-operation. Contractors would claim additional costs or extras before agreeing to any change in their game plan and they know that the cost would first have to be agreed to, in writing, by the project manager. Thus, another party would enter the negotiations putting the inspector in a position where he might be strongly tempted to yield to pressure.

The purpose of these examples is not to down-grade field inspection but to give some indication that field inspection alone will meet with limited success in achieving environmental protection unless it is proceeded by the three key activities. Initial and final design reviews and the preparation of a regulatory documentation. If the applicant is to submit plans, designs, schedules

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et cetera for preliminary review and approval, then it should know what level of detail is required and what standards are to be met. If it does not have this information, it will determine for itself what to submit . To offset this problem, we recommend that the agency set out in detail, the requirements for preliminary design submission. We envisage that this could be done by preparing in advance, guidelines, codes and stipulations.

The preparation of stipulations however, is not something that can be done overnight. It will require a co-ordinated effort by all those currently involved in a legislative or advisory role. It will expose gaps in the existing legislative base, that for a project of this size, will need to be filled. We believe that the preparation of a comprehensive base of stipulations is a key activity for the achievement of environmental protection.

Furthermore, it will be most important to the applicant, because it will be against this base, that the adequacy of preliminary designs will be gauged. If the rules are set down beforehand and each party recognizes that these are the bases of judgment, then inefficient negotiations, arbitrations and appeals can be minimized. Otherwise, waiting until the preliminary designs have been submitted to decide what they ought/ include may lead to an arbitrary and unco-ordinated approach. Both the applicant and the agency must know well beforehand what will be required. The applicant must know well

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in advance if the required information is to be presented in each submission.

Plans and designs submitted by the applicant must be given preliminary design review and approval and then final design and approval by the agency. This latter approval would result in a "Notice to Proceed" with construction for the section under review. Next slide please.

Figure 6A gives an indication of when these reviews and approvals should be done and how long they should take.

In establishing times and procedures for the reviews, we were guided by the approach detailed in "Towards an Environmental Code" published by the Environment Protection Board in 1974. The following summarized the procedure outlined in that report.

- a) Construction shall not be initiated without the written approval of the Agency.
- b) A summary work schedule analysis for the entire pipeline system shall be submitted to the Agency. This would include data collection activities; submittal and approval activities; pre-construction and commissioning activities; and other pertinent data required by the Agency. The schedule would be regularly updated.
- c) The preliminary design for a construction segment shall be submitted for approval up to a 180 days would be allowed for review. In appropriate cases this requirement could be waived.

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- d) A Notice to Proceed may be applied for on construction segments for which the preliminary design has been approved. This submission will be supported by a final design, reports, data, schedules, et cetera.
 - e) The Agency shall review each such application within 90 days and issue a Notice to Proceed when all matters are in conformity with regulations, codes, statutes, et cetera. Such a Notice shall authorize construction of that construction segment only.
 - f) The Permittee may appeal a decision of the Agency within 30 days to the appropriate authority.
 - g) The Agency may at all times inspect on-site activities of the Permittee and may issue suspension decisions should any activity threaten serious or irreparable harm.

In applying this procedure to the pre-construction schedule, we inserted within each key activity the estimated time required to review a particular construction segment. However, there is also a need for an overall review and approval in principal of the total project before either the preliminary or final reviews take place. This overall review would apply to the total system plan, major route selection, particular site locations and the overall schedule. It could include some of the specific reviews and approvals indicated in this figure, Figure 6A, and could extend for some time before these reviews.

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The implications of the review process to the schedule of activities are illustrated here in Figure 6A. Consider the first item in the list of project components - location surveys. We recommend that the specifications for carrying out location surveys in any spread should be reviewed and approved before contracts are tendered. This is indicated by a white triangle at the appropriate point on the schedule and an estimate of the number of days such a review would take. The persons needed to make the review would be proportional to the task itself and the number of construction spread segments coming up for review at that time.

We recommend that preliminary designs and the selection of sites for the many sizes of camps be given preliminary review and that following final design and the preparation of specifications, a final review and approval be undertaken. Final reviews are indicated by a solid black triangle and an estimate of the number of days required. If everything were resolved by the reviews a "Notice to Proceed" with camp construction could be issued. A similar approach for roads, borrow, staging areas, communication towers and wharves is required. In the case of supplies and fuel, a single review and approval would be sufficient since it is assumed that siting has been determined by the location of major facilities and would be taken into account when those are being reviewed and approved. In the case of snow/ice roads, we recommend review of preliminary route

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selection and design, followed by a final review when designs and specifications have all been worked out.

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1 Project components listed
2 under support facilities could possibly be contracted
3 on a cost plus basis. Thus, associated with each
4 contract, there would be a separate set of documents
5 describing the equipment and manpower required for the
6 contract. These would be put out to tender and
7 contractors would bid unit prices for the rental of
8 equipment, wage rates and a time schedule for the
9 contract.

10 General equipment specifications
11 would then need to be approved. Once these were
12 approved, it would not be necessary to review them
13 in every instance. Accordingly such reviews and
14 approval is not shown in this figure. In essence,
15 we anticipate that the successful contractor would
16 mobilize his forces and then receive the detailed
17 designs and specifications to proceed with the job.

18 The detailed designs and
19 specifications would describe the facility, plant or
20 site to be constructed and the construction methods.
21 These documents would not necessarily have to be in
22 the form of a conventional contract document as the
23 contract for the work would be covered by the
24 previously described tender document. The information
25 could be in the form of a description, or data sheets.
26 Whatever the format, the details must be set down for
27 critical review and approval and to enable field
28 inspectors to perform compliance checks.

29 In the case of pipeline
30 construction proper, it is worth noting that many of the

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siting, route and access locations will have been determined during the preceding survey and support facility siting activities. Hence, the advantage of the two-staged approval. Two-staged approval also means that less review is required for the final specifications.

Referring again to figure 6A, we have indicated that a single final review of the detailed clearing specifications will be adequate, although the time for such final reviews has generally been set at ninety days. The same applies to installation and revegetation specifications. In the case of river crossings, preliminary reviews would be required but they will have to be done in phase with the route location surveys, otherwise crossing sites and therefore the route may have to be altered at an advance stage of construction.

Station design could be examined in two stages. First when such matters as slope stability, proximity to rivers, archaeological resources and wildlife areas are considered and; second, when the final design is completed but before the station goes out to tender.

In most cases then, two design review functions are essential if the plans for the project are to be of the calibre to achieve environment protection. If the agency neglects these reviews, the field inspection staff will be faced with an impossible objective.

The final pre-construction work

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assignment of the agency will be to identify site-specific problems that will be important during design reviews and that will require the attention of field inspectors later on. For some locations, site specific concerns will have been identified when codes, et cetera, were being prepared. Thus, the agency should be continuously updating this information as it becomes available from many different sources.

The types of site-specific concerns are legion and Mr. Hernandez has discussed many of them this morning. To recapitulate then, guidelines, codes and stipulations must be prepared in sufficient time before construction begins so that the applicant can prepare preliminary plans in compliance with them. Designs and plans must then receive preliminary approval and specifications, tender documents and final designs must receive final review and approval before any construction activity commences.

There is also a continuing need to compile the many site-specific concerns for consideration during design review and to assist field inspectors at a later date.

Turning to construction. Next slide please. Environmental stipulations and design reviews are not enough, of course. They must be complemented by a strong, active environmental inspection and monitoring program. The fielding of a competent inspection force is key to the achievement of environmental protection on this project.

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If regulations go unenforced,
the field construction will deteriorate--the field
situation, excuse me, will deteriorate and then
arguments of custom and habit will confront those who
try to upgrade enforcement at some later date. The
job of inspection will not be a simple one. It will
require people of considerable experience, capable
of weighing alternatives and making field decisions.

In order to better understand
what inspectors will be confronted with and to explain
what could be involved at some locations, we have
prepared figure 7, typical project developments. This
figure shows the sequence of activities that could be
typical of the work done on the project.

We are assuming that initially
a temporary camp would be set up with fuel storage and
supplies for surveys and site investigations. Preliminary
surveys for location of the wharf site would then be
carried out. This would require clearing of a small
area for subsurface investigations of both the wharf
site and associated offloading area. If the investi-
gation results were not satisfactory, some alternate
area would be examined. In forested areas, such a move
would require clearing access. These investigations
would result in the finalization of wharf, say at
location A in figure 7.

The next activity would be
to locate an access route to the station site and
local borrow pit B. A drilling rig might then be
transported along the access route to borrow area C to

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determine the extent, depth and suitability of the borrow material. If the area did not prove to contain enough borrow, then access would have to be selected to alternate sources of borrow and these would have to be partially cleared and test drilled in the same way. Alternate borrow sites may not be nearby, in which case the originally chosen access route B might be abandoned.

A foundation investigation would be made of the selected station site with associated limited clearing. Similarly the airstrip site E, water intake location F, the sewage lagoon G, the communication tower site H, would be investigated.

The importance of having inspectors on site during such preliminary surveys and investigations is apparent because considerable environmental damage can occur at these times. Land is being committed to certain uses and subsequent project activities merely increase the level of use. If sites or routes are poorly chosen, they will remain so during construction activities. A competent, well-trained inspector with good support, readily available, will thus be required.

Following site finalization, for the various facilities, work will commence in the wharf area with location surveys of the offloading area. Camps, fuel, equipment, materials and supplies for wharf construction would be moved in. The access road from the wharf to the borrow pits will be cleared and equipment will be moved in. Depending on the

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distance to borrow areas, an independent camp may be set up together with fuel storage, et cetera. Clearing of sites, disposal of slash, stockpiling merchantable timber and hauling material from borrow areas would soon get under way.

Clearing of the airstrip, hauling for station pads, erection of larger camps, pumping of fuel from barges to storage, clearing for water supply line and intake structure, clearing and excavation for sewage lagoon, the construction of foundations for the communication tower, the tower erection and the off-loading of major equipment for mainline clearing are some of the activities that will precede pipeline installation.

During these activities, control and co-ordination will be crucial. Monitoring the environmental effects of certain activities will be another role for inspectors. If there is a potential problem, one that is definable in terms of measurable quantities, then measurements should be taken at appropriate intervals. In such cases, pre-determined tolerances would be established, such as remedial action would be required by the project if these levels were exceeded.

Monitoring the feedback into the control function of the project is valuable and necessary.

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Starting to operations and maintenance. Activities of the agency during the operations and maintenance phase are as yet hazy. It is clear, however, that certain project operations will require close attention -- emergency activities, planned maintenance of the right-of-way, erosion control, slope stabilization, frost heave and icing problems, routine aircraft patrols, station supply activities, and scheduling of major overhauls.

Most of these operations will require co-ordinating and reporting with the agency, particularly in the early years as experience is being built up operating the system. The establishment of channels for direct communication and information exchanges will be the key to maintaining environmental quality during the operational phase of the pipeline.

Let me conclude then, our review of key activities. The preparation of stipulations, guidelines and/or codes before any plans are submitted by the pipeline company is of prime importance. This is because the regulatory authority should consolidate and co-ordinate governmental requirements into one body of information which will then facilitate administration and control procedures. This will also be important to the pipeline company because otherwise they will be confronted with a multitude of requirements being imposed on them from different sources. In addition, it will allow the pipeline company to prepare submissions in compliance with these stipulations and

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thus avoid delays and confusion in the review and approval process.

Two stages of approval generally seem desirable, one at a preliminary design stage, and the second at the final design stage before contracts are tendered.

Field inspection will be important to the achievement of environmental protection. Inspectors will need to be well-trained and be ready to commence inspection before the field activities of the pipeline get under way. As particular problems arise, they will require the support of additional expertise for assistance. Site-specific problems will need to be constantly updated so that inspectors can not only enforce stipulations but also respond to a variety of local conditions.

Continuing review and inspection of pipeline right-of-way maintenance plans and procedures will be required for some time following completion of construction.

Turning now to estimated manpower and timing requirements. To summarize this section, two years before any construction work starts a core group of eight people should prepare the goals, objectives and modus operandi for the agency. Then the core group should acquire 15 management, engineering, and scientific staff to co-ordinate the task of preparing all the "rules and regulations" for the project. These senior staff should be

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1 appointed , relocated and trained 18 months before
2 any field activity gets under way. It will take them
3 nine months of intensive effort, with support and
4 assistance from many agencies, to develop the required
5 detailed procedures, guidelines, codes, and stipula-
6 tions, and also to establish a co-ordinated schedule
7 with the pipeline company.

8 By the time the
9 senior staff have completed their documentation,
10 design review staff should be acquired and trained
11 early enough that their design and reviews could take
12 place in the nine months preceding any construction
13 activity. Design review staff would peak at 60 in
14 the second year of construction and numbers would vary
15 throughout depending on the flow of submissions from
16 the applicant.

17 Field inspection staff for
18 the first year of field activity would reach 23.
19 Regional field support expertise would be required
20 to respond to particular problems. In the second,
21 third, and fourth years, over 40 field inspectors
22 will be needed. The numbers will decrease to 24
23 in the fifth year and 10 in the sixth year.

24 Total manpower requirement
25 will peak at 120.

26 In arriving at manpower
27 estimates, we have assumed a certain level of
28 inspection and control, and thus these numbers will
29 be sensitive to increases and decreases in that
30 level of control.

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Looking at pre-construction.

Long before any field activity begins, the pipeline company will be making decisions on the acquisition of barges, pipe, construction equipment, etc. They will have to make these decisions as early as possible to allow for a long delivery time. Because many of the decisions will be significant environmentally, the regulatory agency must be prepared to review them before they are acted upon.

Hence the dilemma confronting those in government who would establish a single regulatory agency for this project. If they recognize the magnitude of the task and proceed to form an agency they will be accused of prejudging the applications before the National Energy Board and the Department of Indian Affairs & Northern Development. If they take no action until some sort of approval in principle is given, they will be caught unprepared to control the project.

In the belief that it is better for the government to be prepared to control the project, and mindful of this dilemma, we are proposing a six-phased approach to setting up the agency that calls for modest beginning with the acquisition of a growing number of staff later on as the construction date nears. The six phases (which are described further later on) are as follows:

Phase 1 = Formation

Phase 2 - Orientation

Phase 3 - Stipulations



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Phase 4 - Pre-construction review and approval

Phase 5 - Construction and restoration inspection

Phase 6 - Post-construction and termination.

Phase 1, which would last about three months, would see the formation of the agency by a core group of eight senior people. These people would be the key to the success of the agency. They would need to be skilled managers capable of handling the main responsibilities of the agency. Their first task would be to establish the goals, objectives, modus operandi, and general liaison procedures of the agency.

After Phase 1 was over, senior staff would be brought in for the subsequent phases. During Phase 2, they would spend time becoming familiar with the project and the locale. During Phase 3, they would prepare the guidelines and stipulations affecting the innumerable decisions that the pipeline company will want to make when approval is given.

Senior staff for Phase 3 would have to be representative of the major disciplines and expertise needed to co-ordinate the preparation of the guidelines and stipulations. We estimate a need for nine people with some junior support staff to bring the total to 15. Phase 3 must be over before the project is approved in principal or the agency will not be prepared to review and approve the company's decisions, which will apply to such matters as when mainline construction should commence, what seasonal limits should be observed, whether protective shoes

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1 or cleats should be called for in equipment specs,
2 what numbers and types of equipment will be required,
3 and so on. Unless the agency is prepared and ready
4 to review such matters with the pipeline company,
5 these decisions will be made without agency input.

6 Phase 4 will see the first
7 large influx of people to the agency to handle
8 pre-construction reviews. These reviews will require
9 senior people in geotechnical, hydrological and civil
10 engineering, as well as botanists and biologists
11 with expertise in fish and wildlife. Expertise in
12 air and water quality and also in archaeological
13 salvage will be required. Forestry and land use
14 planning input will also be important. Generally we
15 envisage that the review staff would be organized
16 into teams to examine various aspects of the pipeline
17 company's submissions, such as stations, rights-of-
18 way, and so on.

19 To estimate manpower
20 requirements for this phase, we grouped personnel
21 into the following broad categories:

- 22 . geotechnical hydrological and civil engineers
- 23 . botanists and foresters
- 24 . environmental engineers
- 25 . fish and wildlife biologists
- 26 . planners
- 27 . archaeologists and personnel for other resources.

28 We reviewed the pre-
29 construction schedule of activities, identified the
30 disciplines that would be involved with each review,

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estimated how much time each discipline would need, and then aggregated the times under the above categories. In doing this, we referred to the potential interaction matrix presented in Volume III, "Environmental Atlas" by the Environment Protection Board. This matrix plots project components against environmental components and identifies the magnitude of possible impact from their interaction. It helped us decide which aspects of the project would require review, and which disciplines would be involved.

The results are presented in figure 8. This is design review and manpower requirements. It is apparent that there is a fairly constant demand for review staff over a three-year period, with requirements peaking at 60 in the second year of construction. In addition, a total of 17 senior staff and core group members would be managing the agency, bringing the peak demand for office staff to 77 persons.

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1 Turning now to construction.

2 To determine the manpower requirements for phase four,
3 construction and restoration inspection, we examined
4 the construction plans in terms of the breakdown we
5 discussed in figure 4. Figure 4 set out what was
6 happening at each location at any given point in time.
7 This enabled us to determine how many inspectors would
8 be required for each construction spread segment,
9 according to the type of activity going on there.

10 Our findings were as follows
11 for surveys and site investigations: Surveys and
12 subsurface investigations of borrow areas, wharves,
13 station sites, airstrips, roads and the pipeline route
14 will be required to determine suitability of location,
15 et cetera. We estimate that two inspectors will need
16 to be on hand at each spread during this work. One
17 for facilities and borrow areas and one for the pipeline
18 route and station sites.

19 Clear, grade, and Construct support facilities:
20 Following surveys and site investigations, borrow
21 operation will begin. Roads, station pads, wharves,
22 airstrips will be cleared and constructed. Fuel
23 storage, fuel, materials, and supplies will be brought
24 in and camp services will be installed in camp set up.
25 We estimate that two inspectors will be needed at
26 each spread. One for facilities and one for pipeline
27 right-of-way clearing. The two inspectors from
28 surveys and site investigations could in some cases
29 also be used to assist on these operations when
30 available.

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1 Construction: During
2 construction of compressor stations and the pipeline,
3 we estimate that three inspectors will be required
4 on each spread. Two for pipelining and one for
5 stations. Inspectors from site investigations and
6 support facilities could also be used here as additional
7 support when available. Summer construction of major
8 river crossings will require two inspectors at each
9 crossing.

10 Revegetation: We estimate
11 that one inspector will be required for each spread,
12 plus perhaps two additional teams of two inspectors
13 in years four and five to inspect regrowth and one
14 additional team of two in year six for the same
15 purposes. These are shown and summarized in the next
16 slide.

17 Using these estimated levels
18 of effort, we have prepared figure 9, Field Inspection
19 Manpower Requirements. Generally, it appears that
20 forty field inspectors will be required in most years.
21 There is significant variation in the numbers required,
22 but this can be reduced through planning. No
23 allowance, however, has been made for staff rotation,
24 turnover, vacations, sick leave, et cetera.

25 We recognize that inspectors
26 will not be able to address with full competence all
27 matters before them. Similarly, we recognize that it
28 is impractical to staff to such a level that all
29 disciplines are represented at all construction sites.
30 Nevertheless, we feel that by using the general category

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of inspector, by thoroughly training these people and by supplementing them with regional expertise drawn with diligent attention to scheduling of resources, from office review staff at such centers as Fort Simpson, Norman Wells and Inuvik, the job of construction inspection can be carried out in an effective fashion.

Operations and Maintenance:

At this point in the planning process, phase six, Post Construction and Termination, we estimated that initially about five people will be required in each region. Four of these would be inspectors and one would be a regional environmental supervisor.

Timing of Manpower Acquisition:

Given that these are the personnel required to staff the agency through all six phases, when should these personnel be acquired? The answer depends on several factors:

- project status and timing
- the level of control desired by government
- whether or not a phased approach is taken to establishing the agency
- how much training and familiarization agency personnel require
- the work involved in drafting stipulations, procedures and manuals for agency operations, particularly for design review, construction inspection and environmental monitoring

Next slide please. With these factors in mind, we have taken the manpower estimates

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from the previous two figures, figures 8 and 9, and together with the concept of establishing a core group and senior staff, prepared a bar chart of total manpower requirements for environmental control. This is shown as figure 10A and 10B. 10A being for CAGPL. 10B for Foothills.

If year one is the first year when field activities commence, it is clear that the minimum lead time required is twenty-four months. Another point, when the applicant is informed of the agency's review requirements and times, it will want to adjust schedules by advancing preliminary and final design submissions so that the overall construction schedule is not substantially altered.

To allow for this eventuality, it therefore seems that the planning for an agency should proceed on a priority basis. This would lead to the earliest possible formation of the agency and appointment of the core group if construction is to commence before 1980.

To conclude then on manpower and timing requirements, months before any field activity begins, the pipeline company will be making decisions and commitments for equipment and supplies that have extended delivery times. The regulatory authority must therefore be prepared at that time to review and approve those decisions that have environmental consequences.

However, this gives rise to the dilemma; will government prejudice the present hearings

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1 and inquiry by moving to establish an agency well in
2 advance of any formal decision? We have concluded that
3 this can be overcome by forming a core group of eight
4 people to head the agency. This group should be
5 formed two years before any construction activity
6 starts. Initially it would establish the framework
7 and ground rules to guide the work of the agency.

8 Senior staff with some junior
9 assistance should be added eighteen months before
10 construction activity. These staff together with the
11 core group would spearhead the preparation of stipu-
12 lations, et cetera. To minimize early commitments
13 of manpower, the detailed work of preparing the
14 stipulations, et cetera, should be given on a contract
15 basis to other agencies for preparation. This process
16 would ensure that the formal control requirements were
17 spelled out for the pipeline company and for agency
18 personnel to be subsequently added for the design
19 review work.

20 Design review staff of
21 geotechnical, hydrological and civil engineers, botanists
22 and foresters, environmental specialists, biologists,
23 planners and other specialists, such as archaeologists,
24 would be required nine months before construction.
25 At the peak of the design review activity, sixty
26 additional personnel would be required.

27 A field inspection staff of
28 up to forty people would be required at the peak of
29 construction. A considerable number of these would
30 be required immediately after field activity commences.

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1 Additional lead time to train and familiarize these
2 staff may be required.

3 Moving ahead then to the final
4 part of this report, deals with our conclusions and
5 recommendations with regards to the agency, I'm now
6 on page 66; by first defining the agency and then
7 recommending a phased approach to its establishment.

8 Definitions:

- 9 1. The agency is an administrative body, duly
10 established by law to enforce all Federal,
11 Territorial and local statutes, regulations,
12 laws, and codes related to every aspect of
13 environmental protection with regard to the
14 preliminary planning, design, construction and
15 commissioning of the Mackenzie Valley Gas Pipeline
16 project.
- 17 2. The agency is established for this specific
18 project only.
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- 1 3. The agency will have a limited
2 life and will cease to exist following a specified
3 post-construction period to complete the commissioning
4 of the facilities, the restoration of disturbed lands
5 and any required post-construction evaluations.
6 Authority would then be transferred by the appropriate
7 mechanism to other agencies.
- 8 4. The agency will bring together those functions
9 of all existing federal and territorial regulatory
10 authorities which affect the project.
- 11 5. The agency will be given such additional powers
12 as is required to achieve environmental protection
13 in the broadest sense on this project.
- 14 6. A federal cabinet minister will be designated as
15 being responsible for the agency and this minister
16 shall be the ultimate authority in all matters
17 relating to the work of the agency or appeals
18 against decisions of the agency.
- 19 7. The agency shall function under the direction of
20 the authorized officer. Some of the duties and
21 responsibilities of the Authorized Officer have
22 been set out in Section 8 of "Towards an Environmental
23 Code" by the Environment Protection Board
24 in their publication of 1974.

25 Looking at the Phased Approach
26 to establishing an Agency. We pointed out earlier
27 that government is confronted with the dilemma when
28 considering the establishment of an Agency to control
29 this project, and we concluded that this in part could
30 be overcome by establishing an agency in phases rather

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than all at once. The six phases and the management strategy involved in setting them up are as follows:

Phase I - Agency Formation.

The first task for the agency will be to establish its goals, objectives, modus operandi, and liaison with other agencies as well as a communication system with the applicant. The management strategy to achieve this might be to form a core group headed by an Authorized Officer, and then have this group, in a mission-oriented task, prepare the ground rules for the functioning of the agency.

Phase II - Orientation and Training.

This phase will mark the acquisition by the agency of senior staff who could be either seconded from federal and territorial departments or hired directly. We recognize that both within and outside government there are growing numbers of people who have been involved with this project in one way or another and these could be an important source of staff. If such sources can not be tapped then time will have to be allowed to acquire, train, and orient senior staff to the project and to the agency. These staff must have the expertise which the agency needs to draw upon to carry out its job. Such senior people are most likely to already be carrying a considerable work load in their present positions, so the disruptive aspects of seconding people to the agency must be taken into account. The agency must acquire senior personnel for continuity

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1 through construction and to meet the tremendous time
2 constraints that could confront the agency.

3 Phase III - Stipulations.

4 We believe that the prepara-
5 tion of stipulations, guidelines, codes, detailed
6 procedures, and an appeal mechanism is vital to the
7 functioning of the agency. We also recommend that
8 these stipulations be prepared in advance of any
9 approval of the project. In preparing these, the
10 agency could assign the work to different departments
11 on a contract basis. Upon completion of the contracts,
12 the agency's senior staff and core group would mould
13 the various inputs into a comprehensive manual for
14 the project. This manual would serve as the basis
15 for review of design submissions. It would also be
16 the basis upon which field inspectors would record
17 the performance and compliance of the pipeline company.

18 Problems that can be antici-
19 pated will arise as a result of the current hearings
20 before the National Energy Board and this Inquiry.
21 These problems may include the question of whether
22 or not the general siting and routing is acceptable
23 as it is currently proposed. Such difficulties should
24 be addressed in the formative stages of the agency
25 when the modus operandi et cetera are being worked
26 out by the core group.

27 The core group and senior
28 staff should utilize other government departments on
29 a priority basis but if these departments can not
30 meet the time and budget constraints of the agency

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then the agency should be free to go elsewhere for the required input. It will also be important that a senior management and core group exist through the life of the agency. In this way individuals will identify with the objectives of the agency and their success on the job will be contingent upon the success of the agency. From a mangement viewpoint, it will be important that the authorized officer heading the agency be free to accept, reject or replace staff, particularly those who do not function effectively within their own working group. The nature of the challenge is such that the best management skills will be required to plan, organize, and run the agency. Those responsible should possess proven management skills and be supported by the required technical expertise.

Phase IV - Preconstruction

Review and Approval.

The importance of this phase has been discussed at some lengths. This phase will mark the first major influx of staff to the agency. From a management and timing viewpoint, considerable time will be lost here unless phase III has been successfully completed. If Phase III has been completed, then the staffing requirements will not be as difficult to meet, because what is required generally of the pipeline company, will have been spelled out in the stipulations. This work will require that staff review preliminary and final designs for compliance with a set of stipulations and therefore their

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work will not be as difficult as it would be if such stipulations did not exist. Throughout this phase the senior staff and core group will be receiving updated and site-specific information from other organizations and departments. It will be their job to communicate any changes to the pipeline company as they arise. It will be important throughout this phase that the agency headquarters be at the same location as that of the pipeline company.

Phase V - Construction and
Restoration Inspection.

The difficulties confronting field inspection will be considerably alleviated if there is a thorough documentation of procedures, and requirements in the form of an inspection manual. Also, the pre-construction reviews of Phase IV will greatly ease the inspection task. Some staff that have been involved in Phase IV may be available for Phase V; however, the activities of Phase IV, while being intense before construction starts, also reoccur preceding two subsequent mainline construction seasons in the case of CAGPL . As a result, a mass movement of personnel to field inspection activities of Phase V will not be possible as a general rule, although some movement and exchange of personnel would benefit the total process and enhance the level of performance of individuals.

It will be important in Phase V to ensure that inspection is organized so that it parallels the geographic breakdown of the

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1 applicant's activities. Thus one can anticipate in-
2 spection being organized around the various construc-
3 tion spreads with additional support expertise being
4 available on a regional basis, for example, Fort
5 Simpson, Norman Wells, and Inuvik.

6 Many problems will confront
7 the inspection staff. It will be difficult for them
8 to operate with authority when living in construction
9 camps and sharing everything, including the climate,
10 with the construction workers. Their effectiveness
11 can also be influenced by project personnel because
12 any resident inspector, of necessity, is dependent
13 upon project staff, for services such as truck main-
14 tenance, living accommodation, and the use of communica-
15 tions equipment. It will be important to remember
16 such difficulties when detailed planning of this
17 phase is undertaken. It has also been mentioned earlier
18 that certain environmental monitoring duties will fall
19 to the inspection staff, but it may be possible to
20 utilize a reporting system by project personnel to
21 accomplish monitoring for items which have an estab-
22 lished standard procedure for measurement.
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1 Phase VI -- Post

2 Construction and Termination. Limited staff will be
3 required to inspect regular and emergency repair
4 activities of the pipeline company. In a short
5 period these duties should be channelled to other
6 departments within the Federal and Territorial
7 Governments.

8 Before the core group
9 and senior staff group are dissolved, it may be
10 advisable to have them prepare their recommendations
11 for coordinating government interest in other large
12 projects.

13 If this phased approach
14 to the establishment of a single regulatory authority
15 for the Mackenzie Valley gas pipeline is adopted,
16 further defined, and then implemented, we believe
17 that environmental control will become a reality. The
18 early phases, however, must be commenced with
19 sufficient lead-time to ensure their completion before
20 any submissions are received from the pipeline
21 company. It will be a difficult task, because
22 stipulations, design reviews, or inspection alone
23 will not achieve environment protection. It will take
24 an integrated effort from a mission-oriented group to
25 achieve this goal. Thank you.

26 THE COMMISSIONER: Thank you
27 very much, Mr. Doyle.

28 MR. GOUDGE: I wonder, sir,
29 if this might be an appropriate place to break for
30 lunch.

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WITNESS TEMPLETON: I wonder if I could have just one minute to summarize.

THE COMMISSIONER: Sure.

WITNESS TEMPLETON: Not summarize but make the recommendations.

The Environment

Protection Board recommended that a single agency be established to control the pipeline project. The evidence you have just heard shows that the establishment of a single agency is in my opinion feasible.

However, we have seen that the lead-time necessary to accomplish this may well require a two-stage approval of the project. Firstly, in principle, and then as project approval. This would provide the necessary lead-time to get the agency functioning before the detailed approvals were required.

I'll talk about this more this afternoon regarding the land use planning. In conclusion then, Mr. Commissioner, the establishment of a single regulatory agency should in my opinion be a term and condition for government in approving any pipeline project.

I think we could break
for lunch now if that's satisfactory.

MR. GOUDGE: Yes, sir, and
then after lunch I think Mr. Templeton will conclude
with his land use proposals.

THE COMMISSIONER: Just before

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1 we break, back in July I met informally with
2 counsel for the parties and indicated to them that
3 the matters that I felt they should deal with in
4 their final submissions.

5 After that I met with
6 Mr. Steeves and Mr. Anthony in Vancouver and told them
7 the same things I had told counsel at the informal
8 meeting we had in July and I was going to do the
9 same for Mr. Veale at lunch today and it occurred to
10 me that that it would be appropriate to invite Mr.
11 Templeton to join us. So, we don't really have
12 any rules we live by here but I think counsel for
13 the Environment Protection Board or whatever its
14 reincarnated version is. So maybe if you would join
15 us, Mr. Templeton, that would mean that I will have
16 informally indicated to all counsel what areas I
17 think they should spend their time preparing.

18 Okay.

19 (LETTER FROM PROF. L.C. BLISS RE: COASTAL

20 ROUTE VS. INTERIOR ROUTE, MARKED EXHIBIT 832)

21 (STATEMENT OF EVIDENCE BY C.H. TEMPLETON PANEL,

22 MARKED EXHIBIT 833)

23 (PROCEEDINGS ADJOURNED TO 2:00 P.M.)

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1 (PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

2 MR. GOUDGE: We're prepared
3 to resume, sir. But before we return to Mr. Temple-
4 ton, I have a letter that was written by Professor
5 Geist, who you will recall was a witness some time
6 ago before the Inquiry, written to Mr. Scott. It's
7 part of the correspondence that Mr. Jakimchuk and
8 Professor Geist have had. It's in answer to Mr.
9 Jakimchuk's letter which was tendered; I would
10 propose that this letter simply be tendered, and I
11 have copies for my friends as well.

12 Then, sir --

13 THE COMMISSIONER: Sorry,
14 what's --

15 MR. GOUDGE: -- it's a
16 letter dealing with Mr. Jakimchuk's letter that was
17 filed about six months ago dealing with caribou
18 research; rather than go into the details I'll let
19 the letter speak for itself.

20 Mr. Gibbs indicated to me
21 just before we resumed, sir, that he would like to
22 address some remarks to you, sir. Perhaps he could
23 do that now.

24 MR. GIBBS: Mr. Commissioner,
25 this has reference to a statement by Board counsel
26 on September 24th, which was the last hearing date
27 before yesterday when neither Mr. Hollingworth nor
28 myself were present, and it has to do with the
29 program of completing the Inquiry by way of each
30 counsel addressing the Inquiry.

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1 To refresh your memory, sir,
2 perhaps, as it's only a few lines, I could read
3 what Commission counsel said. This is on September
4 24th, at page 29733.

5 THE COMMISSIONER: Who said?

6 MR. GIBBS: Mr. Scott.

7 THE COMMISSIONER: Scott?

8 MR. GIBBS: Mr. Scott said,

9 "I thought, sir, I should also announce the
10 further program of the Inquiry, which subject
11 to your ruling, has been approved by all
12 counsel appearing. We anticipate that the
13 evidence will be completed on Friday, October
14 15th, Based on that completion date, Commis-
15 sion counsel will make available to all
16 participants and to the secretary of the
17 Inquiry his proposed terms and recommendations
18 which he will submit to you in argument. There
19 will be available to all -- these will be
20 available to all participants on Monday,
21 October 18th. There will then be three weeks
22 in which participants will have an opportunity
23 to review Commission counsel's recommendations
24 and to prepare their own. At the end of the
25 third week, each participant who wishes to
26 make oral submissions will file with each of
27 the other participants a summary of the terms
28 and conditions that he proposes to advance
29 before you in oral argument. There will then
30 be one week when all counsel and participants

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1 will have an opportunity to review those
2 summaries of terms and recommendations and
3 oral submissions will begin in Yellowknife
4 on November 15th. As I say, that method of
5 proceeding has been agreed upon by all
6 counsel and I'm grateful to them for their
7 co-operation and assistance, and unless you
8 have any objection, sir, that's the way we
9 would propose to proceed."

10 You said, "That's fine," and
11 then spoke about somebody leaving some rings on your
12 desk. I'm not sure whether the "That's fine" meant
13 that you were approving that method of procedure. I
14 wanted to take the opportunity, sir, to speak to that
15 because Mr. Scott was under a misunderstanding.

16 I talked to him on the
17 telephone about it, in that Foothills had not agreed
18 that what was announced was what should be done. It
19 was not a unanimously endorsed proposal. We hadn't
20 signified our agreement, sir, because of the fact
21 that our view of the appropriate way to complete the
22 Inquiry evidently differed from that of other counsel.

23 We agree, Mr. Commissioner,
24 that the terms and recommendations advanced by
25 Commission counsel should be provided to all parti-
26 cipants as Mr. Scott suggested, by October 18th.

27 We agree also, sir, that
28 oral presentations should commence on November 15th.
29 We have no problem with either of those dates.

30 Where we dissent, Mr.

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1 Commissioner, is on the intervening step of each
2 participant circulating to each other participant
3 a summary of what he proposes to say before you,
4 before he has even said it.

5 Mr. Commissioner, if this
6 proceeding were cast in the frame of a contest or
7 an adversary proceeding, then the process of having
8 an opportunity to reply to one's opponent would be
9 basic and well-understood. But what you have been
10 presiding over is not a contest, although that's not
11 always been evident; it is in fact an Inquiry. As I
12 understand those kinds of proceedings, sir, they are
13 terminated not by argument but by a kind of summing
14 up by each participant, and there is no right of
15 reply because there is no adversity of interest in the
16 sense that there is in a contested proceeding.

17 We believe, as I said, sir,
18 that Commission counsel should provide all participants
19 in advance with his suggested terms and conditions
20 because his role is different than that of other
21 counsel.

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He's a part of the Inquiry staff, sir. What he produces will have an appearance, at least an appearance of authority. He will be looked upon as speaking for the Commission and saying, in effect, this is what we're thinking of. Let's have your reaction and that seems to us to be sensible and in accord with reality. Foothills would respond as it thought appropriate when the time came in mid-November to make oral representations.

We request, however, sir, to be relieved of what I call the intervening step of participant's Council circulating summaries. There's several reasons why we seek this relief. Firstly, sir, is the practical one. When you consider the geography and the postal system, and in fact Ottawa post office workers are out this morning, for example, and not all people see that as a serious thing; it's extremely doubtful if summaries would reach their respective destinations in time. So, the preparation of those would be so much wasted time and we have had this occur in this Inquiry when material posted from Calgary has not reached, for example, even Toronto within five or six days.

Secondly, sir, also a practical reason, is that we and Arctic Gas have proceedings going on elsewhere, that is Washington and in Ottawa, and those proceedings require the attention of Council and technical staff. Those people, particularly the technical staff that you need for assistance and advice are not always available and

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1 that's become evident in your Inquiry when special
2 arrangements have had to be made because of witnesses
3 being required to be elsewhere. And certainly, Mr.
4 Commissioner, for the final process of digesting all
5 of the enormous amount of material, we need the
6 assistance of all the technical people we can get and
7 we, in effect, have from October 18 to November 15 and
8 believe we can do it in that time.

9 Thirdly sir, is the matter
10 of time. It seems to us that that person who's most
11 interested in the terms and recommendations of the
12 parties is you, the Commissioner, and you're
13 entitled, sir, to expect the best quality, the best
14 reasoned and the most practical terms and recommendations
15 that can be developed within the time available.

16 In my submission, it would be
17 wrong to interject an unnecessary step that merely
18 limits the time and it seems to me inevitably delutes
19 the quality of the oral representations that are
20 ultimately made to you.

21 Lastly, sir, the nature of the
22 proceeding which I spoke to before. In my submission,
23 what we are expected to do is a kind of summing up
24 rather than argument. I fail to see, therefore, sir
25 that it's of any value or interest to, for example,
26 Messrs. Bayly or Bell or Steeves to know in summary
27 form what I'm going to seek to persuade you to. I will
28 make recommendations. They will make recommendations.
29 You will weigh them all up and give them the weight
30 which you think each deserves. In effect, we are not

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1 replying to each other. We are advancing in each case
2 the interest of our own particular client. So, in
3 my submission, there is not any value even to be gained
4 by circulating prior summaries.

5 It's for these reasons, sir,
6 that I make the request that you delete that inter-
7 vening step and leave it that Commission Council will
8 produce his recommended terms and conditions on October
9 18th and that then we appear before you on November
10 15th and make our oral submissions. Thank you, sir.

11 MR. GOUDGE: Can I respond
12 to that, sir. Other Council may wish to as well, but
13 let me make three comments in reply. First, let me
14 say it categorically, so it will be absolutely clear
15 that the terms and conditions that our staff are
16 preparing to present to you on November the 15th, are
17 being prepared by our staff and by ourselves entirely
18 apart from you. As you know sir, the parties perhaps
19 deserve to be told that again clearly. They will be
20 addressed to you afresh with you having not seen them
21 before, except insofar as they are circulated to the
22 parties on October the 18th. You said before that you
23 intend not to be bound by them, and they are in every
24 sense the product of Commission Council and his staff
25 and that's all. That's the first point I wish to make.

26 The second point is that I
27 appreciate what Mr. Gibbs says about the timeframe
28 that he speaks of. Our staff are finding pressures
29 of time every bit as much as his staff is. However,
30 our staff, as I'm sure his staff has been, has been

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1 working on our proposed terms and conditions for some
2 time. We think we will be able to meet a timeframe
3 that is substantially tighter than the one his staff
4 will have to meet and I think frankly that the proposal
5 that Mr. Scott made does present a realistic time-
6 frame.

7 The last point that I wish
8 to make is that I think it's perhaps not accurate to
9 say that there are no adversities of interest. It's,
10 I think, clear that a variety of views have been
11 expressed by all participants on a variety of different
12 issues. That's the reason there has been a good deal
13 of evidence that is in conflict in this Inquiry.

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The consequence of that, I submit respectfully, is that when it comes to submitting to you, what each Council, what each participant thinks is the appropriate term or condition, there will necessarily, I am sure, if the evidence is any preview, be differences of opinion among counsel and among participants. Those very differences of opinion are differences of opinion that I think, each participant is entitled to comment upon. In order to comment suitably, it seems to me frankly, that it makes sense to have some prior chance to consider what the proposals are that are being offered by others. Unless there is that prior chance to consider, the responses which will inevitably be sought to be made, will be less than fully thought out, and I submit sir that in order for the responses to be as useful to you as they can be, it's absolutely essential that each participant have at least some time in order to consider the summary of proposals that others proposed to offer.

The week that Mr. Scott proposed in order to permit that prior consideration is, I think, sufficient time to accommodate that. Without the week, in my respectful submission, you would run the risk and the Inquiry would run the risk of getting less than fully considered comments upon terms and conditions proposed by others, that participants may disagree with, and it seems to me frankly sir, desirable that you get as fully considered comments as it's possible for the participants

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1 to offer to you. So I would submit sir, that the
2 program that Mr. Scott outlined is a reasonable one
3 which accomplishes something that I think is in the
4 best interest of the Inquiry.

5 THE COMMISSIONER: Does any-
6 one else want to comment on Mr. Gibb's point?

7 Mr. Steeves?

8 MR. STEEVES: I have nothing
9 to say sir. My understanding was that everyone agreed
10 with some reluctance to the arrangements stated by
11 Mr. Scott. I have nothing to add to what anyone
12 has said.

13 THE COMMISSIONER: Mr. Sigler?

14 MR. SIGLER: First of all,
15 the Associations only been involved in the fourth
16 phase and as such, either way is perfectly alright
17 with us.

18 THE COMMISSIONER: Mr. Bayly,
19 do you understand what Mr. Gibbs has said?

20 MR. BAYLY: I think so sir.
21 Maybe Mr. Gibbs can correct me. I gather that he
22 says that the Foothills was not part of any agreement
23 to exchange argument or terms and conditions prior
24 to giving that.

25 THE COMMISSIONER: Well for-
26 get about whether they agreed to it or not. It
27 clearly -- Mr. Gibbs has taken this position and
28 argued it and I don't care what happened at the
29 meeting. Lets discuss it on the merits.

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MR. BAYLY: I think sir, that we'll need some time to look at the submissions being made by other parties so that we can comment upon them as a participant. I would say that if we were to try and do that during whatever period of time we are actually arguing, we will not do a very good job, so I would submit that it's either the proposal that Mr. Scott makes or one that involves an adjournment of some days, perhaps a week is an appropriate length of time, so that we can look at each others submissions. We may or may not have comments upon them, but I can see the situation sir, where my clients may well want to recommend something that the applicants will want to come back and say we can not build it under those conditions.

THE COMMISSIONER: Mr. Gibbs

what do you say about Mr. Bayly's point, this concerns me? Suppose that Arctic Gas -- suppose I go along with you and I believe the parties from any obligation to circulate a memorandum outlining the points they want to make in final argument. Then suppose Arctic Gas comes in and makes a proposal that you take great exception to. You're saying that this being an Inquiry and not an adversary proceeding, you're not entitled then to seek an adjournment to respond to what they've said, because you're not interested in what they say. I'm interested in what they say and in what you say, but you're not interested in what each other says.

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1 You see, Mr. Bayly, who's
2 able and tenacious and comprehensive, if I may say so?

3 MR. GIBBS: A few other
4 adjectives you might add?

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THE COMMISSIONER: If you come in here on the 15th and you come up with a proposal that he hasn't had time to consider, he's going to ask me for an adjournment, and say, "I've got to think about this, I've got to consult Dr. Usher, I've got to consult Miss Allison and Mr. Raddi," and so on and so forth, "and I'll need two weeks," and then we just wind up sitting here, around here at Christmas listening to Mr. Bayly. That's the problem. You're simply saying, I take it, that this is an Inquiry and Mr. Bayly has no right to seek such an adjournment.

MR. GIBBS: There are some hundreds of volumes of evidence and whatever is said in a summing up or an argument, whatever terminology one gives it, must be based upon the evidence. Surely neither Mr. Bayly nor Mr. Steeves or anyone is going to advance a new proposal which is not founded on something in the evidence. Therefore I don't see what need or opportunity there would be for reply. I share Mr. Bayly's "perish-the-thought" and other peoples' apprehension of being here after we complete the oral argument. It would seem to me that what we are doing is taking that volume of material, digesting it, advancing our recommendations to you, and that's it. I may make one recommendation with which my friend disagrees, but after he replies the same situation may arise. I think you weigh them, you take the evidence, you say, "Well, Bayly says this, Gibbs says this, but really neither one of them are right because I heard Dr. Somebody back in May of last

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2 year say thus and so."

3 I just don't see it as being
4 a matching of condition against condition. Arctic
5 Gas may put forward some proposal and I'm prepared to
6 live with that, and they will expect that I will do
7 that
the same; but/you will sift the whole lot of it.

8 THE COMMISSIONER: O.K., I
understand. Well, sorry --

9 MR. STEEVES: It comes down
10 to a question, as far as Arctic Gas is concerned can
11 we have this period for consideration before the
12 argument itself, or afterwards?

13 MR. GIBBS: Or ever.

14 MR. STEEVES: Isn't that
15 what we're talking about?

16 THE COMMISSIONER: Yes.

17 MR. STEEVES: And I would
18 just as soon have it before the argument itself rather
19 than after, from the simple point of view of the
20 economy of effort.

21 MR. BAYLY: Mr. Commissioner,
22 there's one more point that Mr. Gibbs has made, and
23 that is that all our submissions must be founded on
24 the evidence. But we've had before in this Inquiry
25 controversy as to what the evidence which is before
26 you actually means, and I can envisage situations
27 where I may say I think COPE is going to recommend
28 such and such based on this piece of evidence, and
29 Mr. Gibbs may well want to come back at a later time
30 and say, "But that isn't what the evidence says"

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1 and you can't make that recommendation on that basis."
2 If he doesn't want that chance, that's fine; but I
3 can see him having that problem with recommendations
4 that other parties make, and we may all face that.

5 THE COMMISSIONER: I think
6 that everybody except Foothills agreed to this, and
7 I don't know what was in your minds. But Commission
8 counsel is producing, I understand,^a three or 400 page-
9 document at the middle of the month. Now, I hadn't
10 anticipated that on November 8th you would all weigh
11 in with three or 400 pages in terms and conditions.
12 I had thought that you might perhaps even in letter
13 form set out the principal contentions you propose
14 to make. Some of you might do that. Others might,
15 where you have had your own staff, or where you your-
16 self have been going through the evidence with a fine-
17 tooth comb when you've got page references and so on
18 and it's all written out, that you would file that.
19 I'd be happy to read it. I'm not saying I want to sit
20 here and listen to you read it to me, but I'd be happy
21 to read it and happy to have you speak to it on
22 November 15th.

23 But the thing that you
24 circulate on November 8th I had thought -- and you
25 can telex it, you can do a great many things to
26 overcome the problems the mail present us with -- but
27 I had thought it would be, depending on which organiza-
28 tion you represent, depending on the number of staff
29 you've got available, I understand that you just can't
30 crank these things out when you get the urge although

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1 you've all done pretty damn well for a year and a half
2 now, but I had thought that it would depend, and I
3 had thought it would be up to each one of you to decide
4 what exactly you wanted to say on November 8th.

5 Now, let me just before I
6 rule on Mr. Gibbs' motion, let me just make one thing
7 clear to you all, because I don't want there to be
8 any misunderstanding about this. In the normal course
9 of events at the conclusion of the evidence^{of} an Inquiry
10 like this, the Commissioner would ask you all to sum
11 up, as Mr. Gibbs has suggested, and then you would
12 stand up presumably and sum up the case, as you saw
13 it. Now, theoretically that means that if we finish
14 the evidence next Friday we could stay on Saturday
15 and you could all sum up on Saturday and we could
16 all go home and I could write my report.

17 But you know that the practice
18 in Commissions of Inquiry is for the Commissioner, with
19 the assistance of Commission counsel and the staff,
20 to prepare his report. That means that the Commissioner
21 brings his own judgment to bear on all the vital
22 questions. Let me put it this way. On all the
23 questions, and most especially on all the vital
24 questions. Now that's the practice, and any of you
25 who have appeared before Royal Commissions, you know
that that's the practice, and one day some of you
will be sitting on Royal Commissions and you will
realize that that's the way it's got to be done.

26 But in this instance to be
27 fair to all of you, a year ago -- and you'll remember

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1 my direction a year ago to Commission counsel -- I
2 said, "So that you and the staff under Dr. Fyles'
3 direction that assists Commission counsel and has
4 assisted him for a year and a half, so that you, Mr.
5 Scott, and your staff do not have the private ear
6 of the Commissioner when the evidence is over, without
7 the pipeline companies, the native organizations,
8 the environmental groups, the municipalities, and
9 the Chamber of Commerce ever knowing what advice
10 you're giving me, I am directing you to disclose
11 as soon as the evidence is all in, in detail the
12 advice you propose to give me as the Commissioner
13 of this Inquiry." That's why it is being done, so
14 that you can all stand up and you can challenge it,
15 or you can seek to modify it, or you can stand on it
16 and say, "I agree."

17 Now, that was done so that
18 there would be every opportunity given to every
19 participant in this Inquiry to know what Mr. Scott
20 and the lawyers who have been retained by the
21 Inquiry were going to say to the Commissioner, and
22 so that you would know what Dr. Fyles and the Inquiry
23 appraisal team were going to say to the Commissioner,
24 and so you could then deal with those questions.

25 Now, that's, I think, some-
26 thing that I consider well worth doing and I've gone
27 through it all so you'll understand why I did it,
28 because I want to make it absolutely clear that they
29 do not, Mr. Gibbs, speak with any authority. They do
30 not, speak for me. When Mr. Scott distributes that

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1 three or 400-page document, it will represent the
2 work of Commission counsel and the Inquiry appraisal
3 team and it will not in any way represent my own
4 views, nor will it in any way be binding upon me, and
5 I may say I don't know what proposals they're going
6 to bring forward, and I don't want to know until
7 they bring them forward, and then I want the rest
8 of you to tell me what you think of those proposals
9 and then I'll make up my mind.

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Let me make that point again,

that Mr. Scott does not speak for this Inquiry and neither does Mr. Goudge. At any rate, I hope I've made myself clear on that and this, I suppose, is a new departure in the way these inquiries are run but I thought you all deserved a crack at Commission Council and at the Inquiry appraisal team. Okay, well Mr. Gibbs, to turn to your motion, I'm afraid I'm against you and I will expect that on November 8th, by telex, by post, or by pony express all parties will let all other parties know as best they can the essential points they intend to make when they come here on the 15th to address the Inquiry to sum up the evidence and I leave it to the good judgment of each one of you to determine what is appropriate to say in the letter or the memoranda that you send out on November 8th.

We've gotten along well for nineteen months and we really have, and all of you have been splendid in the terms of co-operation you've offered the Inquiry and each other. I think if I leave it to the good judgment of each one of you to determine what should be contained in the material you distribute on November 8th, we'll get along well. I have no doubt somebody on November 15th will have some complaints but we'll treat them in the usual way.

Mr. Gibbs, you should go next door. You might have better luck.

MR. GIBBS: No, I have an unblemished record.

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MR. GOUDGE: Perhaps, sir,
we can return to Mr. Templeton.

MR. HOLLINGWORTH: Mr.
Commissioner, before commencing with Mr. Templeton,
I have one other small point I'd like to bring up.
It's not a long or involved one. Tomorrow, as I
understand from Mr. Goudge, the Beaufort Delta Project
is scheduled to present evidence on presumably the
proposed oil line. Well, it's a matter of public
knowledge, sir, that there is no proposed oil line and,
in fact, Beaufort Delta is folding its tent. That
being the case, it seems to me, sir, that the calling
of this evidence and it's a slim volume at best, is
really a waste of everybody's time.

It's nothing more than sheer
speculation as to where an oil line might run and
apart from that, the evidence contains some generalities
which everyone here is well aware of, such as an oil
line runs warm and a gas line runs cold and an oil
line sometimes runs above the ground and if the gas
line goes this way, we're going to go this way. Well,
now they're not going anywhere and so if they're not,
I fail to see why we should sit here and listen to it.

THE COMMISSIONER: How many
pages is it?

MR. GOUDGE: It's eight or
ten, I think sir.

MR. HOLLINGWORTH: Not very
many. A dozen perhaps.

MR. GOUDGE: It's a short

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1 submission. Let me respond to that again, sir. Some
2 months ago we contacted the Beaufort Delta Group because
3 they were, at that time, engaged in preparing preliminary
4 work for an application for an oil line and they were
5 good enough to respond in a very positive way to our
6 invitation to come to the Inquiry and describe their
7 work and describe the course on which they were embarked.

8 It now does appear that their
9 course is leading them elsewhere than they first
10 thought. Nonetheless they, in my submission, continued
11 to be the reservoir of some knowledge concerning an
12 oil line down the Mackenzie Valley, not I dare say
13 their oil line, since they appear to be dissolving
14 but in my submission, not only will the evidence not
15 take too much time, but it is worth hearing no matter
16 how short because they are at this moment in time the
17 best available source of information on what an oil
18 line down the Mackenzie Valley would mean.

19 Mr. Hollingworth is right in
20 this sense that a good deal of it is now speculation
21 in the sense that it cannot be related to an application
22 that is contemplated by any particular company, but
23 it does speak to the general concept, I submit, of an
24 oil line down the valley. So, I submit for that reason
25 it's of use to the Inquiry. I would have thought
26 frankly it's an addition of use to both applicants who
27 are under the pipeline guidelines charged with certain
28 responsibilities concerning evidence relating to an
29 oil line as well as a gas line down the valley and I
30 think for that reason as well, it's evidence that would

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1 be useful to the purposes of the Inquiry. So, I say
2 for those reasons it's evident that Beaufort Delta
3 continues to be good enough to offer to the Inquiry
4 and that you should hear them.

5 THE COMMISSIONER: Has anyone
6 else got any views on that?

7 MR. STEEVES: When I saw the
8 evidence was lodged with the Inquiry Council on March
9 the 12th and then distributed yesterday, I thought
10 there must be real dynamite in it and I opened it with
11 some trepidation.

12 I found that in fact there's
13 nothing to it.

14 MR. HOLLINGWORTH: My only
15 response to Mr. Goudge, sir, is this; some time ago
16 Mr. Veale brought a motion before you to hold community
17 hearings in the area of the then mooted pipeline,
18 following the Alaska Highway route. That has now
19 become a reality but at the time it was not applied
20 for. You turned down Mr. Veale's motion on the basis
21 that it was only speculation, that it was a proposal,
22 it was on the back of the proverbial envelope and as
23 such, should not be considered by you. I think we've
24 got a matter of more speculation with the Beaufort
25 Delta project, particularly in view of last weekend's
26 announcement and with all due respect to Mr. Goudge,
27 I'll decide what use such evidence is to my clients
28 and my decision has already been made on that.

29 It's of no use whatever, sir,
30 and I think that it's just taking up a lot of everybody's

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1 good time.

2 MR. BAYLY: Mr. Commissioner,
3 on another part of the subject, one of the things that
4 you are to consider, sir, is the possibility of an
5 oil line in a corridor which is occupied by a gasline.
6 Now, we've heard evidence from Arctic Gas and Foothills'
7 consultants on oil lines close to gas lines. If we
8 have people who have been citing this even in a
9 preliminary way from the point of view of a possible
10 or past proponent of an oil line in the same corridor,
11 I would like to hear what they have to say and ask
12 them some questions.

13 THE COMMISSIONER: Well, the
14 pipeline guidelines, as I've drawn to your attention
15 many times, say that we are to proceed on the assumption
16 that if a gasline is built, an oil line will follow and
17 the oil pipeline so far as immediate plans are concerned,
18 seems to be on again, off again. We had Mackenzie
19 Valley research in the early '70's. Beaufort Delta
20 was put together last year and now they've come apart
21 again.

22 I have no doubt that if next
23 year or the year after that DOME discovers a pool of
24 oil in the Beaufort Sea, the oil pipeline will be on
25 again and it would be remiss if this Inquiry did not,
26 as it is required to do under the guidelines, deal with
27 the impact, not only of a gas pipeline but an oil
28 pipeline as well, so far as we're in a position to do
29 so.

30 We don't have anybody coming

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1 before us who says we want to build an oil pipeline.
2 We can't scrutinize it to the same extent as we
3 scrutinize the gas pipeline proposals, but that's our
4 mandate, that's our obligation under the guidelines.

5 As far as this particular
6 evidence is concerned, I have determined that the
7 subject matter is relevant and I'm afraid we have to
8 leave it to Commission Council to decide whether the
9 evidence bears sufficient weight to justify calling
10 it and I can't tell each one of you whether the evidence
11 that you have prepared is so tenuous in terms of its
12 weight that you should just forget about it. I'm
13 afraid that would be infringing on your mandate as
14 Council.

15 I hope, Mr. Goudge, you'll
16 glance through this. If you, on reflection, decide
17 it is a waste of time, you'll tell these gentlemen not
18 to spend their last day in the firm's employ on the
19 plane to Yellowknife.

20 MR. GOUDGE: Well, I should
21 say that they indicated last week that they would like
22 to come. They have from the beginning thought that--
23 to be as helpful as they could. They obviously no
24 longer have any kind of application that they could
25 speak to but they do have the general knowledge that
26 they've accumulated during their time with the company
27 and I think frankly it would be useful to us all.

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1 THE COMMISSIONER: O.K., well,
2 we'll leave that up to you. If they're here tomorrow
3 we'll welcome them.

4 Well, that was a good session
5 of argument, Mr. Templeton.

6 MR. TEMPLETON: Well, while
7 you're on the subject of announcements maybe I should
8 have made one myself that I should have done before I
9 started this morning. Last time I was here giving
10 evidence was on -- I was chairman of the Environment
11 Protection Board, and if you remember, the Board
12 folded up on the last day of the testimony, which was
13 January 14th, I think.

14 Since then whatever work has
15 been done has been done by -- on behalf of me person-
16 ally and so that the evidence that we have given
17 today was not vetted by the other members of the Board.
18 So I think I should have said that this is my evidence
19 and that of Mr. Doyle and Mr. Hernandez, who I support,
20 and agree with their testimony but it's not the Environ-
21 ment Protection Board information. I don't know whether
22 they would agree or not.

23 THE COMMISSIONER: Fine.
24 Maybe you'd draw the microphone closer to you, Mr.
25 Templeton, and we'll be able to hear a little better.

26 WITNESS TEMPLETON: The Environ-
27 ment Protection Board recommended to you, Mr. Commissioner,
28 that one of your terms and conditions be that a land
29 use plan for the Western Arctic be prepared regardless
30 of whether or not a pipeline was to be built. The

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1 Board also recommended that native claims be settled
2 before pipeline routing and construction was approved.
3 These two recommendations are, of course, inter-related
4 because undoubtedly the settlement of the native land
5 claims will, of necessity, reflect policy decisions
6 respecting existing and probable future land use.

7 I still agree with both of
8 these recommendations even though they were made some
9 2½ years ago. However, there is no indication
10 that the Government of Canada has changed its mind
11 from the policy expressed on January 18, 1974 when
12 Mr. Jean Chretien, then Minister of Indian & Northern
13 Affairs, stated at the opening of the Northwest
14 Territories Council:

15 "This government, after weighing all of the
16 factors involved very carefully, has come to
17 the conclusion that a gas pipeline down the
18 Mackenzie Valley is in the national interest."
19 Also, it would seem that the demand for a pipeline
20 is even greater today than it was at that time, and
21 government policy seems to be to proceed with the
22 building of a pipeline regardless of whether or not
23 native land claims have been resolved at the time
24 the decisions respecting the pipeline are made.
25 Further, I doubt if native peoples will be ready to
26 finalize their claims by the time the government is
27 ready to consider the pipeline. I think that we must
28 realistically assume that the pipeline could well
29 be approved by the Government of Canada between one
30 to two years' time.

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Throughout the hearings the native peoples have clearly indicated their disappointment in the Government of Canada for not recognizing them, their rights, their traditions, and their culture. They are understandably using the pipeline issue to gain this recognition. The government, on the other hand, can say that the native peoples have not made their claims in terms that the Government of Canada can understand or accept.

It is perhaps worth recalling Mr. Eric Gourdeau's evidence wherein he stated that the success or failure of the social aspects of the project would be measured by the native peoples' perception of the project. If native land claims were not settled, he said their perception of the project would be a negative one. But he also said that a land claims settlement in itself would not be a cure-all for all the problems native people feel confront them, nor would it mean an end to the demands of Southern Canadians for access to northern resources. Therefore, although most people have placed a top priority upon settlement of native land claims, once they are settled many long-standing problems will still remain. The Quebec Hydro-Cree settlement, for example, solved only some problems. And as Mr. Gourdeau has testified, the Cree peoples' perception of the Bay James project is negative.

The natives' perception of you, sir, is positive, I am sure. At long last someone seems to be listening with a sympathetic ear.

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I think the perception of the rest of Canada towards
you is also positive. The big problem now is that
some of us have made a native land claims settlement
the foundation beam on which the social platform
rests. If this settlement is not forthcoming, the
native peoples will understandably/disappointed and
skeptical. Failure to resolve this issue will also
increase the growing synicism of Southern Canadians
respecting government's responsiveness to the people.
I fear that much of the valuable pioneering work that
you have done would, under these circumstances, be
undone.

Unquestionably, we who are
interested in the terms and conditions which should
govern construction of the pipeline find ourselves
in somewhat of a dilemma. Do we say there has to be
a detailed land use plan and final land claims
settlement before the pipeline is approved, and
thereby run the risk of having it approved with no
settlement of these two issues?

Your report, Mr. Commissioner,
will take Canada to an intersection of a number of
roads at the top of the hill we can't see over.
The road we would like to take is obstructed and the
question is: Should we sit and wait till the
obstruction is removed and thereby run the risk of
slipping backwards, or should we take a detour and
try to get around the obstruction? The detour has
its mud holes and we may get stuck, but with the
momentum you have provided, I think Canada should go

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In Chief

1 as far as it can towards ensuring that satisfactory
2 options for land claims settlement will be maintained
3 through a preliminary land use plan recognizing the
4 native rights. At the same time, the Government of
5 Canada must make a definite time commitment to com-
6 plete land use plans and settle land claims. To me,
7 it would be completely unacceptable to build a pipeline
8 without such commitments.

9 If native people are assured
10 that their rights to some land are recognized and
11 their rights to this land plus future land assigned to
12 them cannot be casually usurped, they may react more
13 positively not only to the project but to government
14 as well.

15 Before I go on to discuss the
16 staging of the government and the project operations,
17 I would like to spend a few moments on my concept of
18 a land use plan. I have written a fairly lengthy
19 argument on the need for a land use plan, and some
20 criticism of why there is not one already. But I know
21 you are pressed for time, so I will leave that out and
22 get down to discussing my concept of a land use plan
23 and recommending to you some terms and conditions that
24 I think are practical within the time frame of this
25 project. I do this in the hope that they might be
26 considered practical by you and possibly the government
27 might actually put them into effect.

28 The land use plan, as I envision
29 it, specifies immediate and long-term allocation of
30 resources sensitive to the goals and aspirations of

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In Chief

1 the disparate segments of Canadian society. I think
2 we have made it abundantly clear, however, that the
3 needs and aspirations of one particular segment of our
4 society -- namely, the native peoples of the Western
5 Arctic -- should receive paramount consideration in
6 this planning process. In my view, these hearings have
7 placed you in a unique position to articulate,
8 probably better than any other single person, the goals
9 and aspirations of the disparate segments of our
10 society as they relate to the Western Arctic in
11 general, and to the pipeline project in particular.
12 And I further feel that you have developed considerable
13 sensitivity to the goals and aspirations of the native
14 peoples who feel most immediately and directly threat-
15 ened by a development of the scale envisioned here.

16 I therefore look to you,
17 Mr. Commissioner, to provide government with insight
18 into the goals and aspirations of the disparate groups
19 interested in and affected by the development in the
20 Western Arctic. As I stated, I feel you are in a
21 unique position to provide this insight and articulate
22 a framework of social goals and aspirations within
23 which a land use plan can be formulated.

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Land claims, a settlement of which we have endorsed from the outset and continued to endorse, endorse aside and convince some of the concerns expressed by the native people is routed in fears born of uncertainty respecting the future course of events. After this development, what next? Where and when? A well conceived land use plan incorporating clearly defined zones and allocations, indicating potential development phasing and incorporating administrative safeguards to ensure referral to people before reallocation is permitted could go a long way in allaying these fears. For the first time, some insight into future development would be available.

I would like to recommend to you, Mr. Commissioner, that you force the decision to establish a Land Use Plan by recommending to the Government of Canada that if it gives permission to build a gas pipeline, that it give it in two stages. The first stage, being Approval in Principle of one application and one route, with the terms and conditions which you and the National Energy Board will be recommending and also the initial components of a land use plan which recognizes the rights of the native people.

The second stage, and no sooner than 18 months later, should give Project Approval. During the 18 months, the regulatory body or Agency and by the Agency there, I mean the Agency that Mr. Doyle talked about this morning and was recommended by the Environment Protection Board, for

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the project would be in operation, the final project designs would be ready for approval, a land claim settlement reached and a land use plan installed and a land use zoning authority in operation. In short, enough preparatory work would have been done to justify actual project approval.

Now I would like to discuss briefly what these two stages would involve:

Stage 1 or Approval in Principle.

In giving its Approval in Principle, the Government should formalize the following:

First, Incorporation of communities. By so doing, no one could usurp the land in a community without meeting the requirements of the community.

b) Zoning of hunting and trapping areas shown on the 1976 Land Use Series as Traditional Use Zones where other uses could not be made of the land without notice to the parties interested in that land, public hearings, a judgment, and compensation and/or reassignment of other lands.

c) Establishment of a Land Use Zoning Authority on which local residents had representation and which would hold hearings in communities affected by any proposed zoning changes. This committee would be funded by the Government of Canada and have a full-time secretariat composed of people living in the north.

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- 1 d) Establishment of a Mackenzie Valley transportation
2 corridor along the accepted pipeline route from
3 the Alberta border to the northern terminus at the
4 Mackenzie Delta. This corridor would be 5 miles
5 wide except in the Traditional Use Zones when it
6 would be narrowed to 2 miles wide. The corridor
7 should not come within half a mile of the Mac-
8 kenzie River, nor should the corridor extend
9 within the community limits. Although the corri-
10 dor would be initially approved and the gas pipe-
11 line in it would be approved as to the route and
12 and approval in principle of the line, the ancil-
13 lary features such as access roads, wharves, and
14 borrow pits would require approval by the land
15 use zoning authority to ensure that the resources
16 of the corridor are not exhausted by the first
17 user of the corridor. Since the corridor would
18 cross the Traditional Use Zones, compensations
19 and/or additional lands would have to be provided
20 present users of these lands.
- 21 e) Establishment of a special category designed
22 the Mackenzie Delta Zone, created because of the
23 uniqueness and importance and present development
24 demands on the area. The location of this zone
25 would be the area west of the Tuktoyaktuk Road
26 and north of the Dempster Highway. The westerly
27 boundary would be two miles west of the Mackenzie
28 Delta as outlined on the 1976 Land Use Information
29 Series.
- 30 f) Classification of the balance of the Mackenzie

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1 Valley and the northern Yukon as a land freeze
2 zone until the land use plan was installed and
3 the Land Use Zoning Authority which includes
4 local residents was operating and able to deal
5 with future land use change proposals.

6 That was all the first stage,
7 that's the approval in principle stage. That's what
8 I would like to see the Government do at the stage
9 that it gives approval in principle of one application
10 for one route.

11 Stage 2 is Project Approval.

12 As I mentioned earlier,
13 Project Approval would be no sooner than 18 months
14 after Approval in Principle because by that time the
15 pipeline company could have advanced its planning and
16 designs to the point that it could ask for approval
17 with a good degree of certainty as to construction
18 details, schedule and equipment to be used.

19 During the same period, the
20 government agency could be organized and staffed and
21 ready to consider the detailed designs of the pipe-
22 line company as Mr. Doyle pointed out this morning.

23 Also during this time, the
24 government and the native groups could be working on
25 a land claims settlement and have a definite target
26 date for completing negotiations.

27 Concurrently the Land Use
28 Zoning Authority could be legally constituted and
29 the members could prepare themselves for the work
30 ahead in considering applications for zoning changes.

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1 They too would have a definite date to be ready to
2 start operating because immediately after the land
3 claims are settled, there will undoubtedly be an
4 immediate demand from government, industry and in-
5 dividuals to alter zoning designation on land not
6 covered by the land claims settlement.

7 Another major recommendation
8 is that a Land Use Zoning Authority be jointly created
9 by the Government of Canada and the Territorial
10 Governments. There are examples of such authorities
11 in every Province and city in Canada so I will not
12 dwell on the details of the terms of reference of
13 such a committee. There are, however, two points
14 that need to be stressed. First, the authority members
15 must reside in the north and native peoples must be
16 members of the authority. Second, the authority must
17 give the residents of the northern communities the
18 opportunity to express themselves in their own way
19 on familiar grounds within their own community.

20 Now I would like to elaborate
21 on the Mackenzie Delta Land Use Zone that I recommended
22 a few minutes ago.

23 Up until now, by my choice,
24 I have excluded the Mackenzie Delta Crossing from
25 my comments. Recently, though, in considering how
26 a land use plan should be prepared, I could scarcely
27 exclude it. The Mackenzie Delta is a most environ-
28 mentally and socially sensitive and significant
29 phenomenon not only to existing residents and future
30 residents, but to all of Canada and perhaps the world.

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1 It is traditionally used by 5 communities. It is
2 unique in that it is the only major delta feeding
3 the Arctic Ocean in North America and is a biological
4 factory for the insertion of heat, nutrients, and or-
5 ganisms into the food chains of the Arctic Ocean.
6 It is also under development pressures from the oil
7 industry and governmental organizations.

8 In considering a land use
9 plan for such an area, one must consider very care-
10 fully the long term needs of the people who have
11 moral and legal rights to some, if not all, of the
12 land.

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1 One must consider the long-term
2 biological consequences of the land uses proposed.

3 One must consider the demands
4 of future generations of both northern and southern
5 Canadians.

6 One must consider the demands
7 of southern Canadians because they too contribute to
8 the well-being of the North and northerners.

9 One must consider the economics
10 of the projects proposed.

11 One must consider the
12 irreversible actions that have already been made and
13 the apparently inevitable actions that are yet to come.

14 One must consider the stated
15 policies of the Government of Canada and those that
16 appear to be adopted but are not yet defined.

17 One must consider the state
18 of knowledge to predict the changes that will be
19 wrought by a proposed action to the social, economic,
20 and biological environments.

21 In addition to participating
22 in the work of the Environment Protection Board, I have
23 read the transcripts of your hearings in Inuvik,
24 Mr. Commissioner, where the Mackenzie Delta was
25 discussed. I attended a CARC Conference on the Beaufort
26 Sea in Ottawa in November, 1975 where such knowledgeable
27 people as Dr. Ian McTaggart-Cowan, Dr. Don Gill and
28 Dr. Everett Peterson presented papers.

29 I presented a paper on the
30 Physical Invasion of the Mackenzie Delta by projects

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now proposed, along with the accompanying ancillary activities and other projects. Although the scenario that I painted has been criticized as to some of the projections and the conclusions, I have not received criticism as to the extent of the activities proposed. The list of construction activities is like--that is likely is large and some of the projects are gigantic. For example, one gas plant is estimated to cost one thousand million dollars.

Of course, most of the money will be spent in the South, but just installing the equipment by men and machinery will have a major impact. That is only one project. Roads, villages, wharves, borrow pits and the like will all follow. Then there may be gathering lines, oil lines, et cetera, et cetera, et cetera. The list is long, the dollar cost tremendous and when you spend large sums of money with men and machines, you will alter the natural and social environments. Appended is a copy of the talk I gave if more elaboration is needed as to what I thought.

So, I would like to make the following recommendation for your terms and conditions, Mr. Commissioner. I recommend that each development type activity proposed for the Mackenzie Delta, whether pipeline, ancilliary project, gas plant, gathering system or oil well or town, be restricted until it is established that there are no reasonable alternatives to it.

Even if the lesser alternative

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is chosen, it should be subject to an intense scrutiny as to the risk of damage it poses both to the social and natural environments. The judgment on each project should be made with the following criteria in mind: That the disruption it causes would be permitted if the social or natural environment can recover in the short term in most cases and in the long term in all cases. That, in my opinion, is the way to define whether a project is acceptable or not.

That the Mackenzie Delta Land Use Zone be considered a land freeze zone until the Zoning Authority is established. This would mean that before any development activity could take place, the Zoning Authority would have to hold hearings before zoning changes could be made to the Mackenzie Delta zone. Such changes would define the boundaries of the change and provide documentation for the reasons for the zoning change and the alternatives considered. Such documentation would be signed by the authorities making the judgment and be publically accessible documents.

Having considered the projects in the Mackenzie Delta coming before this Inquiry, I make the following recommendations:

1. that the Cross Delta Route proposed by Canadian Arctic Gas not be approved, and;
2. that the Foothills proposed line within the Delta must be constructed from snow or ice roads rather than gravel.

As I see it, the favorable

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aspects of the Cross Delta Route are:

- a) its shorter length. But, of course, one should not consider only the length but also the quality of the area crossed.
- b) its lesser costs.
- c) the risk of construction oil spills in the outer delta rather than the risk of construction oil spill upstream of the entire delta.
- d) some maintenance jobs close to home for delta residents.

The unfavorable aspects are:

- a) the unknowns - interference and disruption of the biological activity of the delta, the inter-relationships of food chains and limiting factors all of which are unknown. The effects of frost heave of a chilled pipeline on the unfrozen sediments of the delta.
- b) the knowns - the effects of construction and maintenance repair activities on waterfowl and beluga whales.
- c) most of the consultants that appeared before you said that the Cross Delta Route was acceptable with certain controls but did not put forth that it is environmentally preferable.
- d) severe social problems due to the intense activities associated with oil drilling and gathering systems, gas plants and ancillary activities by many construction related organizations which are not used to considering that solving social problems of natives is one of their goals.

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This latter point is common to both CAGSL and the Foothills proposals. In other words, we're talking there about--there's a momentum gaining for many construction organizations and operations in addition to those of the pipeline but if we're going to preserve the delta, you'd have to think about reducing all activities that aren't absolutely necessary.

I have been involved in the construction industry all my working life and I can assure you that although many of the problems of the Alyeska line may be unique to that project, the magnitude of the problem is not unique for that size of job. Things do go wrong and I would not like to see them go wrong in the Mackenzie Delta.

In my opinion, the chief reason for using the Cross Delta Route is one of saving money and that is a very important one. I recognize that the demand for money to provide for our energy needs is far beyond Canada's ability to produce it. I believe that the shortage of money will, in the future, reduce Canada's standard of living but even so, I cannot accept the risks, some of which are known, some of which are unknown, of unnecessary development in the delta. The Cross Delta Route is, in my opinion, unnecessary. There is an alternative and so I recommend that the Cross Delta Route not be approved.

I believe that Foothills can build a gas pipeline from a snow or ice road and therefore, I recommend that in this unique and critical

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1 Mackenzie Delta Zone, an all-weather road is unnecessary
2 and should not be approved.

3 I would further recommend
4 that each gas plant, gas gathering line, and oil or
5 gas well proposed for the Mackenzie Delta Zone be
6 reviewed by the Land Use Planning Authority to see
7 if there are alternatives which would disturb the
8 delta less. There will be some proposals, of course,
9 that should not be approved, regardless of their
10 lesser disruption.

11 I have a few further
12 recommendations to make in the matter of Land Use
13 Zoning.

14 When I was before you on
15 January 12 and 13, 1976, I mentioned that although I
16 preferred the interior route, one factor made me accept
17 the coastal route. That factor was that I understood
18 that the sedimentary basin extended west of the delta
19 and, therefore, it was likely that a gathering line
20 would bring future gas to the shore of the delta.
21 Thus, since there would be a pipeline west of the delta
22 anyway, the mainline might as well be there and thus
23 cut down the length of the gathering line. This is
24 on page 16288 of the transcript.

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In Chief

When I was working on my talk on the physical invasion of the Mackenzie Delta, I had a petroleum geologist who was familiar with the delta review with me the areas most likely to have oil or gas, and make a guess at where the gathering lines would be located. Although I showed on the map accompanying the talk a gathering line going to the shore west of the delta, it did not seem to either of us that it would necessarily go west of the delta.

About a month later after preparing the talk, your hearings were held in Inuvik and I was surprised to see that the argument that a gathering line would probably have to come -- I was surprised to see that the argument that a gathering line would probably have to come to shore west of the delta was not advanced as the chief reason for adopting the coastal route. Messrs. Hemstock and Williams in Volume 53 of the transcript discussed the extent of the Tertiary Basin and said that the gas would have to come to shore, and I assume they wanted to leave their options open to go to shore in the shortest possible distance when; and if, gas is discovered.

Dr. McTaggart-Cowan said in Volume 107, page 16298, that he was willing to gamble that there would not be a continuous line needed all along the coast, because he was concerned about the projects that would follow a continuous line along the coast.

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1 He felt that if it was intermittent there would be
2 less pressure to put another line or a road or some
3 other facility along it.

4 I agree with Dr. McTaggart-
5 Cowan, there does not seem to be a compelling reason
6 for adopting the coastal route, and I therefore have
7 no hesitation in recommending that the interior route
8 alternative be used if the CAGPL application is
9 accepted.

10 I further recommend that if
11 the CAGPL interior route is adopted, that the pipeline
12 follow the Dempster Highway through the Richardson
13 Mountains.

14 My final recommendation regard-
15 ing the Mackenzie Delta land use zone is that no fuel
16 depots be allowed in the Mackenzie Delta zone alongside
17 flowing streams or rivers, and that wharves containing
18 bulk fuel unloading facilities be located in such a
19 way that oil containment booms can be installed down-
20 stream of all unloading facilities so as to completely
21 contain oil spills with one hour's notice.

22 This recommendation should
23 apply to whichever application is approved.

24 Thank you, Mr. Commissioner.
25 THE COMMISSIONER: Thank you,
26 Mr. Templeton.

27 MR. GOUDGE: I think that
28 concludes the evidence of this panel, sir. Perhaps
29 prior to cross-examination we might break for coffee.

30 THE COMMISSIONER: Right, we'll

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1 do that.

2 (PROCEEDINGS ADJOURNED FOR A FEW MINUTES)

3 (PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

4 THE COMMISSIONER: O.K., are
5 we all set, Mr. Goudge?

6 MR. GOUDGE: Yes sir, we're
7 prepared to resume. Cross-examination will be led
8 off by Mr. Bayly.

9
10 CROSS-EXAMINATION BY MR. BAYLY:

11 Q Mr. Templeton, I'll
12 address the questions to you in general, but feel free
13 to refer them to either Mr. Doyle or Mr. Hernandez.
14 I'd like to start with the land use plan that you've
15 presented and ask you some questions about its
16 implementation and ask you if you have any thoughts
17 about this.

18 To begin with, can you tell
19 me, have you thought who would present the initial
20 draft plan, that is the land use plan?

21 WITNESS TEMPLETON: I think
22 the initial land use plan should be done by the Govern-
23 ment of Canada because they are the present owners of
24 the land, and I recognize that there are some caveats
25 on that, people that say they have some rights, but
26 I think the Government of Canada has that responsi-
27 bility.

28 Q Now, you've talked about
29 the unique position of this Commission and by its
30 position that it's able to ensure that the land use

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

1 plan would reflect the things which have been said
2 regarding the proper and preferred land use. Now,
3 can you give us some advice on how the Commission
4 would do this with the exception, perhaps, of what
5 you've already suggested on the site-specifics of
6 the individual routes themselves? Because I take it
7 that the land use plan would involve far more than
8 either the pipeline right-of-way or the corridor
9 you talked about.

10 A Yes, of course. Well,
11 I don't think that the Commission can go or should
12 go into setting up a land use zoning authority because
13 this involves policy decisions by government, and
14 certainly the local people. So I think probably
15 the way, as far as the Commission should go, would
16 be to recommend those things that it feels are neces-
17 sary to a land use plan based on the Commissioner's
18 experience, having listened to these hearings for
19 this long time.

20 Q You're aware, though,
21 Mr. Templeton, that this Commission has heard a number
22 of -- a large number of site-specific items that don't
23 relate directly either to the corridor or to the
24 possible right-of-way. How should those be dealt with
25 and passed on, do you have any idea, to the land use
26 planners?

27 A Yes. I suppose you're
28 speaking now of things like the islands in the middle
29 of the Mackenzie that are used as staging areas for
30 geese, and also the very extensive operations that

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

1 are proposed for the Mackenzie Delta. I think that
2 probably -- I don't know how far the Commissioner
3 could go. I went as far as I personally thought I
4 could go by saying that there should be a land freeze
5 except for the actual corridor, and the right-of-way
6 within that corridor in the Mackenzie Valley, and
7 that, and that they would set up a zoning authority
8 which could consider the other things because when
9 you're talking about zoning you've got to consult the
10 people that are affected, and I don't think the
11 Commissioner has that time any longer to go to them
12 and say, "Well now, I would like to do this and what
13 do you think about it?"

14 Q So you're suggesting
15 that whoever was doing this should go back to the
16 communities either with a draft plan or to collect
17 information for a draft plan.

18 A Well, I think the
19 Government of Canada should come up with a plan and
20 then the zoning authority would administer it and
21 decide those things that it could do once the plan
22 was formulated. But the Government of Canada has
23 been studying land use planning in the Mackenzie
24 Delta, I would gather, for years, because I've seen
25 this group mentioned in the government telephone book
26 for years, and I assume that a great deal has been
27 done and I think it's now time to say to them, "All
28 right, produce it."

29 Q Maybe the thing to do
30 would be to submit those telephone numbers as an

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Cross-Exam by Bayly

1 exhibit to the Inquiry.

2 A Oh, incidentally, it
3 isn't in the phone book this year.

4 Q We may have missed our
5 chance. How would you propose that local northern
6 people, whether they're native or white people,
7 be able to control or influence the initial plan?

8 A Well, I think the
9 Government of Canada in preparing the initial plan
10 would have to take them into account. The plan, I
11 think I listed quite a number of things -- I'm not
12 sure of the page now, but I listed quite a number of
13 things that you had to consider when you were taking
14 -- when you were preparing a plan, and the native
15 people, well all the residents, must of necessity
16 be taken into account in that, as well as things like
17 government policy and things like that, and also the
18 existing land uses that must be respected.

19 Q All right. You're
20 aware, though, that people in the Mackenzie region
21 and the Mackenzie Delta and the islands that surround
22 it have been trying to influence land and water use
23 plans for a number of years, and I'll give you some
24 examples here and ask you to comment on whether
25 these are the land uses that there's been some
26 controversy over between people. One is the Banks
27 Island seismic work in the early '70s; the Cape
28 Bathurst land freeze; the Husky Lakes question,
29 what should be done with them; the permanent road
30 issue between Tuk and Inuvik; and the fight over the

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1 Dome Petroleum drill sites in the sheer zone. Would
2 you agree with me that these are issues where northern
3 people have tried to influence land use planning,
4 whether we call it a master plan or whether we call it
5 isolated planning for various areas of this region?

6 A I think all of those
7 things you listed, as far as I know them, would be
8 items which would be discussed under land use planning,
9 except for perhaps the Dome Petroleum offshore
10 drilling. I'm not sure that that would normally be
11 in a land use zoning map, for example.

12 Q Now, these are areas
13 where planning has been done by the Federal Government,
14 where local people have either supported or opposed
15 the planning, or there has been a division among
16 local peoples. One of the things I'd like to know is
17 can you think of, with the exception of National Parks,
18 and perhaps the national capital area around Ottawa,
19 where the Federal Government is the regional planning
20 authority, except in the Territories? Do they
21 get involved in this in the provinces?

22 A No, I don't think they
23 do directly, although through Central Mortgage & Hous-
24 ing they control housing policies and mortgages and
25 things like that, they do exercise a certain amount
26 of control that way. In other words, if you haven't
27 got -- if you don't meet a zoning requirement, they
28 won't approve, say, a house -- a mortgage on a
29 house.

30 Q But that's not federal

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1 zoning, that's usually a zoning in the local area.

2 A Zoning as a rule is
3 a municipal authority.

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1 MR. BAYLY: Q The reason

2 I ask this is because it appears in a simplictic way
3 in the Provinces, that zoning is done either by
4 municipalities or by Provincial Governments in estab-
5 lishing regional plans for example and if the federal
6 government decides to do something which they consider
7 to be in the national interests, then they exercise
8 their expropriation power in order to do so, which
9 may if it's within their sphere of jurisdiction,
10 allow them to do it in spite of the plan. You've
11 suggested in your zoning authority, that this be the
12 creature of the federal government acting presumably
13 in the national interest, without any regional hedge
14 with the exception of the make-up of that zoning
15 authority, that the people should be northern resi-
16 dents. Is that correct?

17 WITNESS TEMPLETON: A I

18 think perhaps I got lost in the middle of that. I
19 think the --

20 Q Let me put it another
21 way then, because I think I can clarify it. Why not
22 use a more local government, either the territorial,
23 a regional government of an area like the Delta or
24 the municipalities in the region to develop the plan
25 and then if something has to be done like the con-
26 struction of a pipeline in the national interest,
27 leave it to the federal government to exercise the
28 expropriation power.

29 A I think the problem
30 there is that to most Canadians, they don't know

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what land use -- land claims are and they don't know what is owned by the government of Canada by their definition, what's owned by the Government of Canada and what's owned by the native people and at the moment, many people, certainly in the federal government would say, that the federal government owns the land and so that I think they have to -- have to be party to -- I think they have to set up the original land use plan because of that and if you owned the land, you would want to have your say just as you -- if the native people owned the land, of course they want to have their say, so I don't think you should exclude the federal government from it, either now or in the zoning authority. I'm not suggesting because native people should be represented and local people should be represented, but that would exclude government of Canada people. The only rider I put on it, that I thought if the members of the committee should be northerners -- should be living in the north, so they have a --

Q No, I have no trouble with your authority once it's set up, but I'm concerned with the -- the generation of the initial plan which is then obviously administered, changed and dealt with by the authority which is much more regional than -- than national, in its membership in any event.

A I'm not sure that it's entirely regional. I can't accept the idea that the Mackenzie Delta is -- is regional in scope, it's

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Cross-Exam by Bayly

national and perhaps international in scope, because of the uniqueness and importance of it, so, I wouldn't like to exclude the Government of Canada from -- from its considerations of that. That area is -- is perhaps special, but, I think that it applies everywhere.

Q Have you examined the efforts of the territorial and federal governments in the Delta Regional Planning Committee which was set up last year or so and attempted to construct a regional plan for the Mackenzie Delta area?

A Well, I don't know very much about that. I've talked to a few people casually and I really can't -- I don't think I could comment on that.

I think the main thing on that respect is that there has been a great deal of Land Use Planning attempted and it's a very difficult thing to come up with the first plan and it's very difficult to even come up with the first draft and people being what they are, leave tough decisions as long as they can and the hope that I had would be that the Commissioner would somehow or another force the -- force them to come up with the plans so that everybody could take a look at it.

Q But should this Commission then get into recommending certain things that should go into the plan recipe? See, you said that's the federal responsibility and what I'm concerned with is, whether we've learned anything in this Inquiry that you think should be passed on to help

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

formulate this plan?

A Well only of a general nature similar to what I recommended in a -- in a Mackenzie Delta zone, of corridor widths and some of those things of a general nature. I think there's a danger in going into too many details without being able to go through the planned development process which is a public participation process. In other words, you usually start off with something and you take it to communities and you discuss it with planners and all this sort of thing. I don't really think the Commissioner has that time to do that.

THE COMMISSIONER: One interesting thing about Mr. Templeton's proposal was this; this is simply an observation. The ubiquity of land claims was manifested by Mr. Templeton's talk on land use because having put land claims to one side, and gone on to develop his Land Use Proposal one quickly perceived that his proposal regarding the governance of land use in certain respects resembled the proposals that native organizations are putting forward under the heading of Land Claims for the governance of land use. You always wind up coming in by the same door you went out or else going out by the same door you went in whatever they -- I think it's from Confucious.

: A I'm

not sure whether I'm in or out now.

MR. BAYLY: Well let's

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Cross-Exam by Bayly

assume you're in and the observation that you've made it's difficult to deal with land claims at this point, therefore let's have a Land Use Plan and Pipeline Claims in later. I think it maybe --

A Well not really. I don't think you can separate land claims settlement from land use, they're part and parcel of the same thing and what I was trying to do, was, recognizing the practicalities of the time, to say let's go as far as we can on both of them and try to establish the idea that in everybody's mind, northerners and southerners that something is -- we've gone as far as we could go at this time and try and build up some confidence that -- that we will manage the north in its, to the best of our ability and I'm speaking of we, as Canadians now, not --

Q The only difficulty I have with that Mr. Templeton, is that, the criticism of the Delta Regional Plan as it was being developed from native peoples and I know you're concerned with what their criticisms may be, because you want them to be able to live with this, was that, Land Use Planning or the creation of a Land Use Plan is in fact, what the land claims is all about and to discuss one in the absence of the other it makes little sense. What I'm going to suggest to you because of that, is that, in order to create an initial plan the government has to either through this Inquiry or by going into the community through one of its other arms or agencies, determine what areas are important

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

to people, so that those can at least initially be set aside pending the settlement, so that whatever use they are put to in the interim, does not destroy potential other uses.

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A Of course. But I think the government has gone a long way in that and I think the 1976 Land Use Information Series shows a great deal of that. Now, it probably doesn't go as far as the native organizations think it should go, but it has gone quite a ways in drawing a line around a certain area and say this is used for these uses on a temporary basis or whatever designation they give.

I think they have gone quite a ways in dealing with these aspects.

Q Well, on another area, you have made a plea that our recommendations to this Inquiry and our argument be addressed to the site-specific as well as the general recommendation. You've made your own recommendation site-specific as they pertain to the application. I'm concerned that you may not go farther or that you may even recommend that we don't go farther with regards to site-specific recommendations which will assist in the development of a land use plan and I use this as an example.

One of the problems that has been raised by the Environment Protection Board and others on the subject of the North Slope routing is that the North Slope route might be alright for a gas pipeline, but even Arctic Gas' environmental consultants express concern if that became a corridor which was to be shared by a permanent road and an oil pipeline.

A That's correct.

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Cross-Exam by Bayly

Q So, we're getting into land use planning considerations in determining site-specific recommendations which may pertain more to a road and to an oil pipeline, than to a gas pipeline and should we be doing that, in your opinion?

A Well, I guess this is the problem of the pipeline guidelines. The guidelines seem to have been drawn up with the idea of the Mackenzie Valley as being the corridor but they included the northern Yukon as almost a sideline but the guidelines seem to be talking always about the Mackenzie Valley and you can't help but wonder if this other didn't just kind of slip in.

THE COMMISSIONER: Mr. Templeton, I know the guidelines well and you'll find that they refer to two corridors and they specify them and this unintended reflection on the public servants who drafted the guidelines is not altogether justified because it's clear that they did contemplate two corridors and they specify those corridors in a geographic sense in terms. However, I shouldn't be getting into this.

A I recognize the specified two routes.

Q Two corridors, sir. However, I shouldn't be arguing with you.

A Perhaps I've always read them wrong but I thought that you could--I very nicely categorized that in my own mind that the northern Yukon was the right-of-way and the Mackenzie was a corridor

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and to me they're quite different. That is the right-of-way applies only to the gas pipeline and that it isn't a corridor. But to clarify that, I think the Environment Protection Board said that they do not recommend there be a corridor across the northern Yukon and I would recommend that--

Q Well, you said sir, you and your colleagues, as I recall, said that if there were a gas pipeline right-of-way across the northern Yukon, one of the conditions should be that there be no further pipeline development and no oil pipeline built. That's a condition you can't really impose on Arctic Gas, speaking of the opponent. It's really a matter of policy for the Federal Government to lay down. Isn't that what you said, or have I got it wrong?

A Yes, I think that's right, but I don't have the restriction of telling the government what to do. I don't think there's anything wrong with saying to the Government of Canada, we've looked at this and regardless of your policies in the past or anything else, I don't recommend the corridor and I have no hesitation in recommending that as one of your terms and conditions too.

Q Well, you're adhering to the position you took in June of last year and January of this year then?

A Yes. I can still accept the right-of-way.

Q Yes.

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Cross-Exam by Bayly

A But I can't accept the corridor. The right-of-way is 150 feet wide or something, not five miles.

MR. BAYLY: Now, you're prepared then to discuss the question of corridor in the Mackenzie Valley.

A Yes.

Q And to be site specific on that, because you've recommended today that there be a corridor five miles wide and two miles in certain places, contemplating the possibility of other facilities other than the gas pipeline?

A Yes.

Q Now, is your conclusion on whether or not there should be a corridor at all? Is it based on hard scientific evidence or are we faced with the situation where it seems nicer not to use up too much wilderness and let's put the facilities no farther apart than five miles?

A Well, when you're building a land use plan, when you're preparing one, you have to take into account the things that are there, government policy, people's aspirations for the future and many, many things. There already is a road to the southern end and there is a road in the northern end and you can't get around that. It's irreversible. There are communities along there and there's airstrips and there's communications and then there's a winter road.

Also, there's stated government

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Cross-Exam by Bayly

policies that they were going to build a road the whole way on a priority basis, now stopped, but you have to take into account the government policies and I think my experience is that the government policy is that it is going to build that road.

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Cross-Exam by Bayly

Q But you're putting into --
THE COMMISSIONER: You're

going to build what?

A Build a road. It's just
a matter of when.

MR. BAYLY: Q Your recommendation, though, of putting everything in the corridor is based on first of all it probably works out better in a land use plan; secondly, there are other facilities already planned or commenced or partly built.

A Yes.

Q That are there anyway.

A The government policy
is.

Q But have we any evidence -- and I'm not suggesting that what you have put forward is a bad idea -- but have we any evidence that it's going to be better for the various species of animals, for example, the fish, to have everything close together? Or is this a planning mechanism?

A I don't think that anything is good for the species. No development is best for the species.

Q Nobody has grappled with that, Mr. Templeton.

A Pardon me?

Q Nobody seems to have grappled with whether just on a scientific basis it makes sense to put facilities close together. I don't know whether they would damage each other, or whether

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

A Well, I think there have been quite a number of studies done, particularly in United States where environmentally and socially it's probably better to concentrate them because you don't have all of the networks going out into all areas.

Q I think in Southern Ontario they call it the greenbelt that they put all these things in.

Now, during the 18-month period that you propose between the approval in principle of whatever facility gets the go-ahead and the startup -- this is on page 7 of that supplement to your evidence. Have you thought of what mechanisms would look after land use or land use planning in the interim, and what they would be guided by?

A Well, there would be, as I understand or what I'm suggesting is that the corridor be drawn with a right-of-way within that corridor, and that the rest be frozen until the authority could become active and consider ancillary uses.

Q Well, that may be all well and good in the Mackenzie Valley, but what is going to happen in the delta and offshore where oil and gas exploration companies are bound to be scrambling to find more fuel to put into the pipeline, and they are going to be making land use permit applications for quarrying sites and wharf sites, etc., probably more intensively than they have done at any

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

1 time in the past.

2 A Yes, I recognize that,
3 but that responsibility rests with the Government of
4 Canada whose job it is to plan for the nation's
5 future.

6 Q Well, let's talk about
7 the sequence of that, though, because I think that
8 may be important. Should the initial land use
9 plan be put forward prior to this approval in
10 principle, so that the people who are involved in the
11 present structures for granting land use permits, for
12 example, will have some guide as to where and how
13 to grant applications? This may be very important
14 to local people, for example.

15 A I don't think that it's
16 practical to try and put in a land use plan too
17 quickly. If you're going to take the communities
18 into your planning process, you've got to give them
19 time to consider it and there may be a problem
20 initially, but I'm afraid that's what we've been
21 living with just now for many years, and I think we
22 are going to have to live with it for another 18
23 months.

24 Q O.K., so when you talk
25 about a freeze, you don't really mean a freeze in the
26 sense that certain activities, particularly in the
27 delta area --

28 A Oh yes.

29 Q -- continue to go ahead.

30 A Oh, I mean a freeze,

Templeton, Doyle, Hernandez
Cross-Exam F / Bayley

but a freeze I'm recommending that there be a land use freeze and this is not at all unusual all over Canada, that while they prepare a master plan or something else, that they freeze the zoning. But that doesn't mean that everything is absolutely frozen; it means only that anybody who wants to change something has to go through a process with the existing planning authority, which in this case is the Government of Canada, to demonstrate that what they're doing is probably going to be compatible with the long-term use, and they have to demonstrate something. I don't think you can just walk in and say, "I want to stake a claim on all this gravel up here," because I wouldn't think that the Government of Canada would permit that.

Q Now, you talked about defining the community boundaries at page 7 of your supplement. Now, we heard yesterday from Mr. Baring-Gould and Miss Bennett that Valdez had set for itself fairly wide municipal boundaries, and this turned out to be a benefit because a lot of the facilities that were located in the area were within the municipal boundaries and this created some tax revenues which eventually will be able to be used to offset some of the particularly the social impacts that have taken place. Some other communities, I think Stewart was one that had not established a wide municipal boundary, and I think it was Glenallen that he referred to, which had no -- was not an incorporated village and had a lot of problems, it could have no

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

influence on the land use around it.

Now, you've said villages should be incorporated and their boundaries should be set. How do we determine what the boundaries of a village should be, because we've already had Inuvik prior to your appearance here today, apply for quite a wide boundary to take in a large part of the surrounding area?

A Well, this has been discussed in many jurisdictions over the years, and I think it can be handled by -- in a number of ways. The taxation point that you bring up, industrial and commercial taxation is needed in all communities in Canada so that they can exist. Otherwise they have to be subsidized by somebody, because of the school problems and others.

But you can -- the Government of Canada can assign industrial taxation to a city, even though it may not be inside the boundaries and this Provincial Governments have done this in a number of instances. Some instances Crown corporations of the Federal Government give grants in lieu of taxes, even though they're outside the community, and I think that can be -- the problem of having too wide a boundary is lots of examples of that and lots of bad examples, because they start thinking about the industrial taxation and forget that when they take on a large area they take on responsibilities to provide services like schools and buses and fire and police and sewer and water and

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

1 all the rest of it, and if they have a very large
2 boundary and allow ribbon development, they will get
3 into serious financial difficulties because they can't
4 afford to service it. So if their zoning inside the
5 town -- I think I'm perhaps getting too far into a
6 town planning now. I'm really talking about the broad
7 aspects.

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Templeton, Doyle, Hernandez
Cross-Exam by Bayly

Q I'm concerned about how all these villages protect themselves. For example, if a community, I think Fort Good Hope would be an example, have a potential gravel quarry site which is within two miles from its town center, and it decided that it should, in setting the boundary of its community, include that so it would have some control over it and if it had a lake that it got its drinking water out of, it might well want to protect that so that it wasn't^{used} up to make snow roads so that the people wouldn't have to pay additional taxes to bring alternate sources of water and gravel.

A Well, those can be handled by a land use zoning. You don't have to be inside the incorporated part of the city. I think Vancouver gets its water from outside the city, outside of Greater Vancouver and many places. Winnipeg gets it in Shoal Lake on the border of Ontario. I don't think that's an insurmountable problem.

Q Well, you're prepared then to allow or suggest to the Government of Canada to try and figure who, for example, should share the Yaya Lake Esker?

A Yes, somebody has to put some controls on that, otherwise it will all be gone. I would think that that regional asset that should be managed very carefully.

Q Because you feel it may some only be on the regional interest to save/of that gravel for future generations in the Richards Island area.

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

1 It may be in the national interest to use that gravel
2 to build the pipeline.

3 A Well, the national
4 interest though is surely not short-termed, you know.

5 Q Sometimes we think it
6 only lasts till the next election.

7 THE COMMISSIONER: Well, speak
8 for yourself.

9 MR. BAYLY: Now, let me turn
10 to your comments on the single agencies and I understand
11 that there are various possibilities. You can either
12 leave things the way they are and hope that the existing
13 agencies will do the jobs they've been doing and perhaps
14 increase their staff or you go for a separate agency,
15 either on the model that Mr. Doyle has suggested, or
16 on some other model?

17 A Perhaps Mr. Doyle could
18 answer that.

19 Q Those are really the
20 choices that are available.

21 WITNESS DOYLE: That's correct.

22 Q Now, I have a paper here,
23 Mr. Commissioner, that Commission Council was kind
24 enough to get for me and it's a summary of the "Working
25 Group on Government Operations During Northern Pipeline
Construction", prepared by Mr. Dave Gee and others and
it sets out two options. I understand, Mr. Doyle,
you're aware of the existence of this study group and
the two options they've put forward.

26 A Yes, in a cursory fashion.

Q Yes, one of them being
to leave things the way they are and the other to set
up an authority which takes over a large number of the--

A I believe they refer to
it as the one window approach.

Q Yes. I gather that has
something to do with where you go to get all your
tickets?

A Right.

THE COMMISSIONER: Oh, I see.
That was the window for construction. Remember that
window?

MR. BAYLY: I thought it was
actually but I couldn't fit it into that windowframe.
Now, they say in this report on page five that the
single agency could be the National Energy Board within
large responsibilities or a new Crown corporation as
provided for by the Financial Administration Act.
Would you suggest that your agency either be the
National Energy Board with the large responsibilities
or a new Crown corporation or something separate from
those two options?

A I wouldn't want to give
you a nice simple answer to that, Mr. Bayly, basically
because what I endeavored to do with the group of
people I had looking at an agency was to define the
magnitude of the task, to decide if it was feasible
to see what the resources in terms of people would be
and when you'd want to get them.

THE COMMISSIONER: Excuse me,

Mr. Doyle. What was that question again?

MR. BAYLY: The question was whether Mr. Doyle had any opinion as to whether the single agency could be either the National Energy Board with the large responsibilities or a new Crown corporation as provided for by the Financial Administration Act and I'm quoting from this report which makes these two suggestions for a single agency.

THE COMMISSIONER: Yes. Well, it seems to me, Mr. Bayly, I know I discussed this with all of you once before, it seems to me that it may well be appropriate for me to recommend to the government if Mr. Templeton, Mr. Doyle and those who-- Mr. Hernandez and those of like mind persuade me that it is sound, that in order for the terms and conditions that I recommend be imposed on any right-of-way that is granted, in order for them to be efficacious that there be a single authority empowered to administer and enforce. So, I'm willing to listen to that. But I don't think it is appropriate for me to go beyond that and to suggest to the Government of Canada that a particular agency or department or newly established entity should do that. It seems to me that I then am engaged in passing a judgment on the capacities of the department and agencies of the Government of Canada and no one has asked me to do that and no one expects me to do that and I don't intend to do it.

MR. BAYLY: I'm not suggesting that you do, sir, but we do have thoughts from this group that the agency should spring up and dissolve at

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Cross-Exam by Bayly

the end of this process and I want them to say what kind of an agency is likely to be able to do that. I don't care quite frankly whether it's one department or another, in their opinion, but there are these two alternatives. One being an existing agency with expanded responsibilities and the other being the setting up of a new agency for the specific project.

If you want to put it as generally as that so that we don't get into the various existing agencies, I'm quite content to do that.

THE COMMISSIONER: Okay.

MR. BAYLY: I think that is important to find out whether an agency could destruct

THE COMMISSIONER: All right, in that limited sense.

A Well, Mr. Bayly, to, in that limited sense, answer your question, I started with the assumption that a single agency would be constituted. That was my starting assumption. Having gone through the definition of level of control and the project schedule and putting them together and getting manpower outputs and expertise and scheduling, I'm not in a position to come back and pass judgment on my assumptions.

I stated at the outset that I took that as an assumption. I really don't feel qualified to respond to your question beyond that. I took it as an assumption and from there I went on. I didn't evaluate whether or not it was the best of the options. I did not evaluate two options. I did not

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Cross-Exam by Bayly

evaluate the option of trying to do with existing mechanisms. I just looked at the option of a single agency. Now, what I did do was show that the single agency was feasible, that you could put it together. Is that clear?

Q I understand that. So, you haven't even thought of whether a new agency could grow out of an existing organization or whether in order for it to dissolve at the end of the project, it would, in your opinion, have to be something new?

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Cross-Exam by Bayly

A I wouldn't say I haven't thought about it, but I haven't studied it to the length that I studied the requirements in terms of scheduling and activities for a single agency.

Q Well, do you consider it important that the agency dissolve at the end of the project? I think Mr. Templeton, you have an answer to that. Maybe Mr. Doyle has a different one.

A My answer to that is that if you create an agency for this project, that that agency should have a fixed goal, which is to see this project through, and that when that job is done that the work of that agency is terminated and that ongoing responsibilities for the long-term operation and maintenance of the pipeline would transfer back to existing Federal and Territorial Government departments.

Q Would you include in that the possibility of looping and twinning, or twinning of the pipeline?

A I didn't consider what would be involved in looping or indeed the timing of looping. Your question, I think, presupposes a certain timing. Whether when you again taking the assumption of a single agency, whether as time passes, five years, with five years' construction experience under your belt, if you're then faced with the question of whether you're faced with the question of looping and you decide what mechanism should we now use to control the looping project, if that comes

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Cross-Exam by Bayly

1 along, then at that time you must examine whether or
2 not the agency should continue to supervise looping
3 or not. But I haven't examined that.

4 Q Do you have any opinion
5 as to whether the lead time for the creation and
6 setting up of a new authority would be longer than
7 of consolidating into one office the present authorities
8 and beefing up their present staff?

9 A No. As I said, I haven't
10 examined option No. 1 that you indicated, so I really
11 haven't at all examined -- I haven't examined the
12 details of running with the existing government
13 organizations and therefore I cannot pass a judgment
14 as to which is the better way to go, which is the
15 most expeditious.

16 Q Did you look at the
17 possibility of this single authority becoming for
18 the period of oil and gas or really let's just confine
19 it to pipeline construction, virtually a government or
20 the government of the Western Arctic?

21 A That was a consideration
22 and something that we wrestled with in undertaking
23 this study, because we recognized that within the
24 formation of a single agency that existing government
25 departments would still have a role to play in the
26 Western Arctic. We also recognized that there would
27 be boundary difficulties as to where the project
28 ended, and we didn't resolve those. For example, does
29 the project end with the people directly under a
30 contract to the pipeline companies for the purposes

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

of the agency, or does it end at all other companies
that are sources of supplies to contractors? That's
the difficulty. Is an airline company that's supplying
air services to the pipeline operation, that would
surely come under the agency, the activities as they
relate to the pipeline. But that same aircraft charter
company may be carrying on many other activities.
Would they be beyond the scope of the agency? Of course
there are difficulties here, and really while I say we
recognize these, we certainly didn't resolve them.
That wasn't the prime focus of our endeavor.

Q Did you do the same thing
that the Guy report did and find that there were some
90 or so Statutes and ordinances that either the
pipeline authority, if there were a single one, or
the various agencies would have to administer, at
least in part?

A Where we went on that
problem was that at the time that we were undertaking
this particular study, the Federal Government at that
time had a number of Task Forces reporting to the
working group that you referred to, and those Task
Forces were, amongst other things, charged with
delineating the responsibilities and mandates of
many different departments of government, insofar as
they would relate to this project.

We realize that ideally our
study might have been most beneficial if we awaited
the delineation of all those authorities and then tried
to dove-tail everything together into a functional

Templeton, Doyle, Hernandez
Cross-Exam by Bayly

1 management plan. However, because we were working along
2 at the same time, we agreed between ourselves and the
3 people that we were under contract to that we should
4 really disregard the effort that was ongoing through
5 the Task Forces and the working group and take a
6 -- not a legal but just a broad definition of
7 "environment" and really look at the magnitude of
8 the task within that very broad hazy definition of
9 "environment".

10 Q Did you envisage that
11 for infractions of regulations under the control of
12 the authority that the authority would be in charge
13 of its own pursuing of these infractions, or did you
14 envisage that these would be turned over either to
15 the Department of Justice or legal counsel for the
16 various departments of government that exist, or the
17 Crown attorney's office?

18 A Insofar as we recognized
19 that the authority that would be vested in a single
20 agency would have to be clear, that is that the
21 agency must have the authority to say, "Stop," to some
22 small activity or some large activity, if the situation
23 warrants it. Now, we didn't pursue matters beyond that,
24 and indicate at all where legal recourse or whatever
25 might be taken.

26 MR. BAYLY: Those are all the
27 questions I have. Thank you very much, gentlemen.

28 MR. GOUDGE: Mr. Veale?

29
30 CROSS-EXAMINATION BY MR. VEALE:

Templeton, Doyle, Hernandez
Cross-Exam by Veale

1 Q Mr. Templeton or Mr,
2 Doyle, I take it when you go to specific recommendations
3 you would prefer this Inquiry to come to, then you in-
4 incorporate them into final design, and you actually
5 incorporate them into contracts between the applicant
6 and sub-contractors so that they're all written into
7 the project at an early stage. I take it that's what
8 you're driving at. There's still what appears to
9 me to be a gap, and that is the gap between the sub-
10 contractor who has signed a contract saying that he
11 will live up to certain conditions, and his employee,
12 you know, the proverbial cat driver who is on the line.

13 Now, how do you manage and
14 control that cat driver? I mean I think this is one
15 of the problems that they had on the Alyeska construc-
16 tion and are having now.

17 WITNESS TEMPLETON: Well, one
18 of the reasons that we are so insistant on having
19 the regulations put out before final approval is
20 given is that these stipulations or code items or
21 whatever you call them should be known ahead of time,
22 and the regulatory agency would say to the pipeline
23 company, "O.K., you can go ahead, but here are a
24 bunch of stipulations and if you don't live up to those
25 stipulations we're going to lay a claim against you
26 on your performance bond."

27 Now, the pipeline company
28 is quite familiar with that and will pass that onto
29 his sub-contractor and say, "Here are the stipulations
30 that you have to adhere to," and he passes that onto

Templeton, Doyle, Hernandez
Cross-Exam by Vaale

1 his employees and so on, and that's the way you do it.
2 This is the reason that we want these stipulations
3 to be put in at the outset so before those contracts
4 are given to the suppliers and contractors and sub-
5 contractors, that they have a stipulation that they
6 know about and it's in the contract.

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Templeton, Doyle, Hernandez
Cross-Exam by Veale

1 Q Okay. Well who is the
2 penalty going to be assessed against? Is it going to
3 be assessed against the sub-contractor or the applicant
4 permittee?

5 A Well the Agency deals
6 only with the -- with the permittee and the permittee
7 has to deal with his -- whoever he picks to do his
8 work.

9 Q So the Agency then, is
10 not going to get involved with the man right down
11 driving the cat?

12 A No.

13 Q Except on an inspection
14 basis?

15 A No he wouldn't --
16 supervisory, agency supervisory people don't talk
17 to the -- or give instructions to cat drivers, that
18 has to come through the -- through the hierarchy,
19 where the cat driver gets his pay cheque, is usually
20 the place that has the authority over him.

21 Q So the agency is not
22 going to be involved in -- in other words it will be
23 up to the applicant to -- to educate his workers and
24 so on and so forth to follow the code that the Agency
25 develops?

26 A Well I think the
27 Environment Protection Board had provided quite a bit
28 of detail on the sort of education and the sort of
29 magnitude of the education job and it was our recom-
30 mended that every person working on the job would

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receive some degree of training as to environmental conditions, and I assume social conditions as well.

Q Well when you talk about the performance bond, then, I take it from what you said, that the performance bond is a bond that will be activated, that is the mechanism to trigger a payment out of the bond will be done by the agency.

A Right. It will lay a claim against the -- against the pipeline company first and if they can't get that satisfied, they go to the bonding company, who has guaranteed the performance.

Q Okay. I would just like to take a minute just to discuss what kind of penalties you're talking about. If you're talking about a five hundred foot over-flight of Caribou and let's say a pilot goes under that, what's the penalty then, ,what's the response?

A Well it's pretty hard to judge all these cases you know. These are -- I think the courts handle this sort of thing every day to do with -- don't they?

Q Well, I don't think they handle them in the volume that this pipeline agency may be concerned over. In other words, you're not going to take every over-flight or under-flight whatever it is, to a court and I take it that's why the agency in the bonding process has been recommended.

A No, you don't -- you don't to a court, but if you -- one -- one flight, if

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it doesn't seemly affect things that much, you might get by with a warning or something like that, but, if it were deliberate flying over the calving grounds, I think you would take a pretty serious view and try to make some kind of an assessment.

WITNESS DOYLE: . . . I might just add that looking at that sort of problem and many others that you could raise say in the context of a welder. If a welder does one bad weld, I don't imagine you'd fire him off the job. If he does 20 he'd be in real steep trouble, so you know -- I think in that sort of context you have to look at all these little violations.

Q Mr. Doyle, there's one thing that I wasn't quite clear about in the concept of the agency. There's been a lot of discussion about whether construction can be completed in one winter across the north coast of the Yukon. Now is it your concept, of this agency, that when the final design comes in, the agencies may say, you can't do it in one winter, it'll have to be a two winter or a three winter construction schedule? Is that the kind of decision making that you envisage for this agency?

A Yes.

I indicated this morning that one of the requirements of the agency would be to examine overall projects, schedules and timing and of course in that, and as a construction experience is built up, say along the Mackenzie Valley, there would be an experience factor

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1 in there, which will tend to adjust schedules in any
2 event and at that time, one would hope that the pipe-
3 line company wouldn't be coming forward with a up-
4 dated schedule that would say, we will build it in
5 one winter across the Coast if all indications are
6 from the two years of experience on the Mackenzie
7 Valley that indeed it can not be done. So I think
8 there's a feed-back factor here.

9 Q My next question is
10 possibly for Mr. Hernandez. I mean it relates to the
11 the map that you presented on the Interior route and
12 I realize you presented this as an example, but I
13 have some specific interest in that. You haven't
14 made any site specific recommendations relating to
15 the inter-action of the Dempster Highway and scheduling
16 and the Porcupine Caribou herd and a great deal of
17 evidence has been heard at the Inquiry on that inter-
18 action. Now isn't that the kind of site specific
19 recommendation you should have in there?

20 WITNESS HERNANDEZ: Yes

21 I think those have to be added on during the additional
22 final site review process we discussed before as more
23 information comes in you've got to look at what it
24 means, are there new additional concerns that have to
25 be looked at and these kinds of things have to be
26 looked at, I wasn't able to.

27 Q And I take it then,
28 that you're not able at this time to talk about the
29 specific recommendation of Mr. Templeton, relating
30 to actually having the Interior Route go up the

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1 Dempster Highway?

2 A I didn't look at that
3 at all, no. I haven't --

4 Q Mr. Templeton, why
5 are you recommending that Interior Route? I mean
6 that's what you mean by the Interior Route, isn't
7 it?

8 WITNESS TEMPLETON: Well
9 Dempster Highway?

10 MR. VEALE: Q Well Mr.
11 Templeton's evidence is, that he doesn't like the
12 Coastal Route and he would prefer an Interior Route
13 and then he says, the Interior Route he prefers I
14 think as the route which would actually go far south
15 of Old Crow and up the Dempster Highway and through
16 the Richardson Mountains.

17 THE COMMISSIONER: Well is
18 that the Calef Route?

19 A Well I
20 didn't say that. Perhaps I should repeat what I did
21 say.

22 THE COMMISSIONER: Page 16.
23 Should follow the Dempster Highway through the
24 Richardsons.

25 A Yes, that's right. It's
26 only -- it's only through the Pass, through the
27 Richardson Mountains. In other words, the Interior
28 Route of Arctic Gas is after it is through the
29 Richardson Mountains from the Mackenzie, it is within
30 I think 16 miles or something of the Dempster Highway

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1 and so I say rather than use another Pass, that it
2 would be better to go along the same Pass as the
3 Dempster Highway until it gets through the Richardson
4 Mountains and then go on to the route that they propose.
5 It's only -- this isn't that long a length, but it's --
6 I don't really see a reason for -- for going into
7 another Pass.

8 Q Oh, I see. In other
9 words, the route will go as the applicant as proposed
10 until it reaches the Richardsons and then you're saying
11 it will cut south to the Dempster Highway?

12 A You're coming from the
13 west now?

14 Q Yes.

15 A All right, yes. That's
16 right. It's not very far south though, it's just --
17 they're quite close together on the west side of the
18 Richardson Mountains.

19 Q So you're not then,
20 endorsing with the Calef proposal?

21 A Well I really like the
22 Calef proposal which is the one -- is a projected
23 route south of the Porcupine River, because it --
24 the area north of the Porcupine has some social
25 implications to Old Crow and it's rather a unique
26 area and it would be nice to stay out of it if
27 possible, but, I didn't -- I would -- from what I
28 know, I would sooner have that, but, I really don't
29 know enough to be able to -- to compare them, because
30 it has never been studied in detail and from looking

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at it on the map and certainly Calef has flown it
many times and recommended very highly, but, I
think without more knowledge I don't think I can
come out and recommend it. At one time Gas Arctic
before many years ago, had a projected route there
and they disregarded it because, I think of cost, but
I'm not -- I don't really know all the implications
of it.

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Q This may be a question for Mr. Doyle. On your evidence this morning and I'm referring now to the figure 7, following page 36, which is the typical project development. I think you touched on a point that has always concerned me and that is, if you establish the offloading area as the first step, my difficulty is how does the applicant get to the borrow area in order to make an access road? How is all the initial set-up of the camp structure and, you know, the airstrip, the sewage lagoon, the station pad; how is that done without a tremendous amount of disturbance before anything is in place?

WITNESS DOYLE: I would like to answer that question from a sort of practical construction point of view. If one were on the riverbank and you wanted to get to a designated borrow pit, you would have with you an aerial photograph of the area. If someone had already selected a route for you to get there, of course, with your clearing crew you'd cut access in along that selected route. So, that's pretty straight forward.

With regard to the problem of disturbance in doing that, one recognizes that if you're actually cutting the access for a permanent road which you would build, that the damage to the terrain in clearing and getting in there will, of course, be covered over by the subsequent laying of a road.

So, that's really how one approaches this. Now, if the access to the borrow site,

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1 the example given this morning should prove that the
2 borrow resources weren't sufficient, then of course,
3 one is faced with another problem of gaining access to
4 either an additional source or a completely new source.

5 So, there may be problems
6 there. However, again from the pipeline point of view,
7 if you're in doubt about such things as the extent or
8 quantity of the resource that's there, you may well,
9 in picking your initial access, be guided by where
10 areas are cleared now, such as along seismic lines and
11 you may take a circuitous route to your potential
12 borrow source along the seismic lines and minimize your
13 cutting until you're indeed sure that the resource is
14 there.

15 Q Well, I take it then the
16 problem there--would that be compounded if you go to
17 the North Slope and you have to not only--you have to
18 get to the site of the snow to build the snow road.
19 Is that a greater problem there?

20 A Well, I didn't weight
21 the relative magnitude of problems as they relate to
22 construction from, you know, one region to another.
23 I was just looking at the types of activities that
24 occur and where people would have to be on hand to
25 check and inspect and supervise these kinds of field
26 decisions.

27 Q Mr. Templeton, I take
28 it that this agency does not in any way replace the
29 public interest mechanism that you proposed in your
30 environmental code?

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1 WITNESS TEMPLETON: Oh, well,
2 you're talking about the Environmental Auditor Group.
3 Is that right?

4 Q Exactly.

5 A No, no, that's completely
6 different. The Environmental Auditor Group would be
7 a very small group of people who would report publically.
8 They would have no line function whatever. They would
9 just make inspections and report publically as to the
10 success of the environmental and perhaps social matters.

11 Q How would that
12 Environmental Auditor Group liaise with the agency?
13 Would they have full access to all the decision-making
14 process that the agency was going through?

15 A Oh, I doubt it. I think
16 they would really just look at it with the idea of how--
17 in a broad brush, how is the project going? Is it
18 doing what it said it was going to do? I don't think
19 they should get into the details of how it's run or
20 how--

21 Q Yes, but isn't that
22 precisely the problem though that to represent the
23 public interest, that Auditor group will have to
24 know what is going on in the agency?

25 A I think the results are
26 what counts and you let them look at the results and
27 report to the people who are not doing the job. They
28 don't have enough inspectors or they're not controlling
29 the bulldozer operators or whatever and that's the
30 sort of thing they would report. I think they'd only

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1 report performance. I don't think--you don't want to
2 set up an organization that's going to be in competition
3 in any way. All you want to do is have a look at it
4 and tell them in broad brush whether they're doing it
5 right or not.

6 Q Mr. Templeton, the
7 problem that I see with your concept of Zoning Authority
8 coming in prior to Land Claims Settlement is that it
9 begs the question because haven't the native groups
10 been saying that they want the land claim in order that
11 they can set up their own institutional framework and
12 have their own local control before any of the other
13 things happen?

14 A I don't think I suggested
15 that the Land Use Zoning Authority be set up ahead of
16 the Land Claims Settlement. I think it was to be set
17 up at the same time that final approval was given.
18 In other words, it should be done at the same time.

19 Q In other words, you're
20 suggesting that land claims are settled completely
21 prior to the Zoning Authority appearing on the scene?

22 A Well, as far as is
23 practical. That would be the goal that they would--
the land claims would settled and the zoning authority
would be set up at the same time the project would be
approved, the final approval that is.

24 Q Well, then what's the
25 necessity then of the corridor freeze?

26 A Well, to prevent
27 unnecessary--prevent people from going in and tying up

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1 land for one reason or another that isn't going to
2 be compatible with the long-term interest.

3 As soon as you decide you're
4 going to change your zoning, there's a lot of
5 opportunists that try to jump in and use up the
6 resources and so, you've got to have the land use
7 freeze to prevent that happening. You've got to have
8 a mechanism to stop it.

9 Q Mr. Doyle, did you
10 consider how the agency would evolve in terms of the
11 management function that would be carried on on a
12 daily basis with the Porcupine Caribou herd?

13 In other words, the agency is not going to get into
14 habitat management, but how will the agency liaise
15 with a group that's responsible for the management
16 of the herd?

17 WITNESS DOYLE: I didn't
18 get into that, Mr. Veale.

19 MR. VEALE: Those are my
20 questions, Mr. Commissioner.

21 THE COMMISSIONER: Thank you,
22 Mr. Veale.

23 MR. GOUDGE: It's five
o'clock. Well, perhaps--

24 CROSS-EXAMINATION BY MR. STEEVES:

25 Q I'm not quite sure I
understand what you're telling us about the single
agency concept. As I heard your evidence this
afternoon, in answer to Mr. Veale I think, you said
that you had assumed there would be a single agency and

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you started at that position and went on from there.
Now, as I read the assumption in your evidence you say
the assumption you made was that there would be a
single government regulatory agency to control from an
environmental perspective the Mackenzie Valley Gas
Pipeline Project.

Now, am I to understand that
you're saying that the only need for monitoring and
control is in the environmental area?

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1 A No sir, you are not
2 to understand that.

3 Q Is the whole of your
4 evidence here, the 80 minutes of it, based on a study
5 of the environmental problem only? I don't see any
6 mention in it of social problems or economic problems,
7 and of the monitoring of those problems by an agency.

8 A You are quite right,
9 that is not in there. The terms of reference under
10 which we did this work was to look at it from an
11 environmental perspective, what would be the numbers
12 of people that you would require from an environmental
13 perspective; when would you need them?

14 Q So that if there's going
15 to be a single agency in the absolute sense of that
16 word "single", then your evidence is not, with respect,
17 of that much assistance, is it?

18 A Well, it is, sir, in
19 that it points out a mechanism and lays the groundwork
20 for planning. It shows how to go about defining where
21 you need people. Now, we started and we did it from
22 an environmental perspective. Indeed, I indicated
23 earlier in response to a question from Mr. Bayly that
24 there were, I believe, seven Task Forces within the
25 Federal Government reporting to the working group
26 he referred to, looking at many different aspects.
27 Some of them were looking at social-economic; others
28 were looking at education and health. I've forgotten
29 right now what many of them were dealing with. But
30 we really were addressing ourselves to one component

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1 or an area that had been addressed by one Task Force.
2 Now what you would really have to do to put together
3 the total agency requirements would be to address the
4 many other interests that are involved in this project
5 and integrate them with the types of people and the
6 expertise level of effort and timing that we indicated
7 in this report. So it's a -- it sets out the structure
8 for planning but it hasn't done all the planning that
9 is necessary.

Q Thank you.

11 What your proposal envisages, as I read it, is that
12 the controls and stipulations that are to govern the
13 building of this pipeline be worked out by this
14 agency, and then consultation is to take place between
15 the pipeline and the monitoring agency. Am I right in
16 understanding that is really what you're saying?

17 A If I understand what
18 you said, the controls and stipulations would be
19 formulated by the agency, and would then be transmitted
20 to the pipeline company, and their subsequent sub-
21 missions of preliminary and final designs should be
22 in compliance with those stipulations, controls, and
23 etc.

24 Q So that the final design
25 by the pipeline company necessarily must await the
26 formulation of these regulations by the authority.
27 Is that right?

28 A That's correct, sir.

29 Q Did you not know that
30 one of the principal functions of this Inquiry was

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1 to draft terms and conditions and to make recommendations
2 of those terms and conditions to the Government
3 of Canada?

4 A I did, sir.

5 Q How is what you have
6 suggested relate to those, if we are to take your
7 advice are we to ignore those, the terms and conditions
8 that come out of this Inquiry?

9 A No sir. In order for the
10 agency to draw together the control framework, they
11 must accept the recommendations of many government
12 departments and they must also, of course, be very
13 mindful of the detailed consideration that will have
14 gone into the preparation of terms and conditions
15 of this Inquiry and others, so that the body of
16 knowledge around which the agency must ultimately
17 prepare its stipulations is the total body, and not
18 just part of the body of information.

19 Q I'm sorry, as I read
20 the terms of reference setting up this Inquiry
21 I thought that was one of its principal purposes,
22 was to determine what the terms and conditions ought
23 to be. Do you read them differently?

24 A No sir.

25 WITNESS TEMPLETON: I'll take
26 a crack at that. I don't -- I'm not sure I have your
27 point either. The terms and conditions that come
28 out of this Inquiry would spell out the environmental
29 and social stipulations that would be passed to the
30 agency. The National Energy Board is hearing and

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1 will bring out certain stipulations regarding other
2 things that aren't considered at this point. Mr. Doyle
3 is saying these have to be put together in the agency
4 to administer the project.

5 Q Is that what you're
6 saying, Mr. Doyle?

7 WITNESS DOYLE: Yes sir.

8 Q O.K.

9 WITNESS TEMPLETON: He's
10 Irish, you know.

11 Q I know, I noticed.

12 WITNESS HERNANDEZ: Aren't
13 we all?

14 Q My Irish is bad, I
15 don't understand what you're trying to tell us here.
16 Why do we have to create this -- if I may call it --
17 a bureaucracy and gradually develop these people who
18 would gradually work out various terms and conditions
19 and principles and philosophies to manage the con-
20 struction of this pipeline? It seems to me that it's
21 a lot simpler than that. The N.E.B. is an agency
22 which is charged by Statute with the responsibility
23 to monitor the construction of the pipeline to whom
24 it's given a certificate of convenience and necessity.
25 Now, is this -- what's the connection between your
26 scheme and the N.E.B., if any?

27 WITNESS DOYLE: I didn't
28 examine at all, sir, what the role of the N.E.B. would
29 be. We left it out of this consideration deliber-
30 ately. However, just as a personal observation, I

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-- to give the overall framework of things, it is
true of course that this Inquiry will recommend to
the Minister of Indian Affairs & Northern Development
terms and conditions that ought to be imposed on a
land tenure agreement, I believe, and they really
are recommendations to the Minister, and I presume
the Minister can do with those as he sees fit approp-
riate. What we are suggesting here is that if and when
the pipeline goes ahead, that the administration of
the control mechanism should be consolidated within
one agency and it really doesn't pre-empt in any way
the terms and conditions that will be recommended
from this Inquiry.

THE COMMISSIONER: Mr. Doyle,
you did this report for the Department of the
Environment and I take it that in laying out your
own terms of reference in the preparation of this
report they didn't ask you to consider the appropriate-
ness of the N.E.B. sharing of these functions. Is that
where we're at?

A That's correct, Mr.
Commissioner. What we -- the way we looked at this
is that for a number of agencies and interests and
subject areas, groups of people can identify levels
of control, and the level of control that may be
identified by many different groups for this project
of course, is different. So when you take a given
level of control and apply it to a project schedule
you get an output in terms of people that you need.

Now, one could, of course,

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undertake to do this for many of the other interests,
the Energy Board being one, interests within the
Department of Indian Affairs would be another, and
really you would only have the total picture in terms
of manpower and schedule for everybody when you have
done all these pieces and then put them together.
This is but one piece.

THE COMMISSIONER: O.K.

MR. STEEVES: Q You had
an opinion as to the relative merits of the cross-
delta or circum-delta and the interior route, and I
understand that your own view is that the interior
route is to be preferred to the other two. Am I
right in that?

WITNESS TEMPLETON: Yes.

Q And I'm not sure I
understood completely, your answer to Mr. Veale when
he asked you why. But I take it it's set out to the
extent that you were able to analyze it, on page
13 and 14 of your evidence. Is that correct?

A Yes.

Q The latter part of --
well, you say two things there, starting in the middle
of the page:

"That the Foothills proposed pipeline in the
delta must be constructed from snow or ice
roads."

A Yes.

Q And the other thing is:
"That the cross-delta route by CAGPL not be
approved."

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1 Then you go on and give your
2 pros and cons for the cross-delta route. Have you
3 yourself or anyone working under your supervision
4 ever attempted an exhaustive analysis of the impact
5 that the construction of an operation of a pipeline
6 would have in each of those three areas.

7 A No, I haven't and I
8 don't think anybody else has.

9 Q Are you familiar with
10 the work done by Bliss and Thompson in this area?

11 A Which work are you
12 talking about?

13 Q I'm referring to --
14 well, I guess you're not. It's a letter dated
15 September 21, 1976, that's not that long ago. Have
16 you seen that letter?

17 A No, I haven't.

18 THE COMMISSIONER: Well, Dr.
19 Bliss told me when he gave evidence as part of the
20 panel back in January that Thompson and he had
21 carried out this analysis of negative and positive
22 impacts, and he said then that he came out in favor
23 of the interior route, and I think that's still his
24 opinion. He simply put it in writing. That's all that
25 he's done, and this letter has been marked as an
26 exhibit and Miss Carriere can let you have it.
27 I can't understand --

28 M R STEEVES: I don't read it
29 that way.

30 THE COMMISSIONER: Well then,

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1 you tell me, because I don't quite understand those
2 figures.

3 MR. STEEVES: Oh well, can
4 I tell you this? First of all, the addition --

5 THE COMMISSIONER: If you
6 get more points, does that mean it's good or bad?
7 That's what is troubling me.

8 MR. STEEVES: Well, I think
9 that's explained, is it not, by the first page which
10 says --

11 THE COMMISSIONER: I still
12 don't understand.

13 well, one
14 MR. STEEVES: --/equals
15 little change to terrain or marine biology.

16 THE COMMISSIONER: Yes.

17 MR. STEEVES: 1 to 5% change,
18 and thus no significance, so that if you had a total
19 -- I'm sorry, if the whole score right down that
20 column amongst those 30-odd items was 1, 1, 1, 1, 1,
21 you would say, "That's where there's the least or
most insignificant impact."

22 If you had a total score
23 against -- I'm sorry, if you had a score of 5 against
24 each of the items under some other column, that,
25 as I would interpret the first page, would mean that
26 in each of those items there was a severe change
27 to terrain or marine biology, thus a highly signifi-
28 cant impact. So if you take all the totals under
29 each sub-heading and add them up, what I get is 54,
30 for around the delta; 57 across the delta; and 73

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1 for the interior route.

2 WITNESS TEMPLETON: I think
3 you said 54.

4 Q I know, but if you add
5 it up, and please don't argue with my arithmetic.

6 A Oh.

7 Q There's an error in
8 the arithmetic.

9 A Oh, I see.

10 THE COMMISSIONER: Oh, I see,
11 he's in error, eh?

12 MR. STEEVES: Not by very
13 much. No, that's a one point error of little
14 significance. No, seriously --

15 THE COMMISSIONER: The circum-
16 delta is --

17 MR. STEEVES: Here's where
18 the errors are. Can I tell you?

19 THE COMMISSIONER: Sure.

20 MR. STEEVES: The general
21 impact says under around the delta says 73 -- 53.
22 It should read 73 if you add it up. The around the
23 delta favorable impacts, the bottom figure is printed
24 44, it should be 54.

25 A Yes, right, I've got it.

26 MR. STEEVES: O.K.

27 THE COMMISSIONER: So just
28 so we understand each other, that means that the best
29 place to build the pipeline, according to Bliss and
Thompson, is along the coast and around the delta;

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MR. STEEVES: Or across the delta.

THE COMMISSIONER: Secondly,

along the coast and across the delta; and thirdly, interior route.

MR. STEEVES: Yes.

THE COMMISSIONER: Have you

seen this, Mr. Templeton?

WITNESS TEMPLETON: No, I

THE COMMISSIONER: Do you want to see it?

WITNESS TEMPLETON: Well, I'm reading it now, yes.

MR. STEEVES: Q Have you got
a copy there?

A Yes. I have the -- well, the question you asked me was, "Have you made an exhaustive study of this?"

And I would ask you, is this an exhaustive study? Because I don't think there are any exhaustive studies of the delta.

Q O.K., have you made a study of the particularities set out in this study done by Bliss and Thompson?

A Well, I haven't seen it until today, but I can comment on some of the problems of this, and of course the comparison of routes is a most --

Q No, I prefer to --
can you answer my question? Have you made a study

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1 comparable to this one about these two routes or
2 three routes?

3 A I'd like to say what
4 is the problem. I haven't made one like this because
5 I don't believe in this system.

6 Q O.K., well your answer
7 is you haven't.

8 A Well, I'd like to point
9 out why. Under human impacts, people impact in a
10 community is given a number, and song birds are
11 also given a number, and they're not equal, and so
12 that's the problem of adding up a bunch of numbers.
13 So when you -- whether it's 44 or 54 is of little
14 significance.

15 Q Where are song birds?
16 A Right here, it's under
17 "Biological Impact".

18 THE COMMISSIONER: Just about
19 caribou.

20 A That's the problem
21 of adding up numbers. It gives you a nice answer but
22 --

23 MR. STEEVES: You know one
24 right across the board.

25 A Well, that's what
26 you're doing. You could go down the whole thing
27 and they're not comparable.

28 WITNESS DOYLE The underlying
29 assumption is that all criteria are equally weighted
30 and thus, as Mr. Templeton has pointed out, song birds

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in the total score are weighted just as heavily as people impacted in communities.

THE COMMISSIONER: You know, Mr. Steeves, Dr. Bliss referred to this study in January when he gave evidence and he conceded that it's not objective, that the subjective element enters into it when you weight the values to be assigned to each of these items in the beginning, and then you add them up and you get what appears to be a scientific and objective assessment but he conceded it wasn't. He said it's just a way of kind of getting a run at the thing.

MR. STEEVES: Oh, of course, I'm not going to wave this at you in argument and say, "There it is." But I'm sure Mr. Templeton isn't suggesting that what he set out on 13 and 14 is an objective analysis either.

Q Are you?

WITNESS TEMPLETON: Well, I
don't think there's any way of proving, it is subjective,
there isn't any question about that, and so
is every other opinion that's been given at this
hearing regarding environmental matters. All the
talk about scientific proof, in my opinion, is just
so many words. There is no scientific proof because
we do not have the information and the data to
make it. So everything that's given is subjective,
and certainly mine is, and I have read the material
and came to this opinion. It's, as you say, my
opinion.

Templeton, Doyle, Hernandez
Cross-Exam by Steeves

1 Q And if you were explain-
2 ing the differences of points of view to my dear old
3 grandmother, I could say, "Your guess is as good as
4 mine." Is that about it?

5 A Well, I'm not sure
6 that I would weigh all the people, as Mr. Doyle has
7 said you don't weigh song birds with people and I'm
8 not sure I'd weigh all people alike either.

9 MR. STEEVES:

10 All right. Leave me
11 aside and let's talk about Mr. Goudge. Thanks very
12 much, Mr. Templeton. That's all the questions I have.
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Templeton, Doyle, Hernandez

MR. GOUDGE: It's almost
5:30. Perhaps it would be an appropriate time to stop
for the day and we could begin with Mr. Hollingworth
in the morning.

THE COMMISSIONER: Okay, and
is Mr. Hemstock going to be with us tomorrow?

MR. GOUDGE: Yes. The program tomorrow, I suggest sir, would be this; we would begin at 9:30 with Mr. Butters. He has a plane to catch and his evidence is relatively short. It's been distributed by Mr. Sigler and Mr. Sigler asked that if possible, we put him on first and we then resume with the cross-examination of this panel and it will be followed by Mr. Hemstock dealing with contingency plans, fuel spills, their corridor evidence and then we'll conclude the day with the Beaufort Delta presentation.

THE COMMISSIONER: I think Mr. Hemstock is here. Mr. Hemstock, you might just look over what Mr. Templeton said about the possibility of the coastal route being invaded in any event. It's getting late and I hope I'm making myself clear. He said that originally he felt that you should build this pipeline on the coastal route because the tendency of discoveries in the Beaufort Sea would likely lead to lines being built from the sea onto the shore, on the coast anyway. So, why go to the interior route when the coastal route was going to get messed up in due course, no matter what you did? So, he said I favor the coastal route.

Now, he says I have looked at

Templeton, Doyle, Hernandez

1 this thing again and I have noticed that Mr. Hemstock
2 in his evidence, along with Mr. Williams in Volume 53--
3 apparently you said something that indicated to Mr.
4 Templeton, ah-hah, they won't necessarily bring lines
5 from the Beaufort Sea into shore along the northern
6 Yukon coast.

7 So, he said let's go the
8 interior route. I hope this is all making sense. But
9 it's all on pages thirteen to seventeen of Mr.
10 Templeton's evidence and if you don't mind, Mr.
11 Hemstock, you might just comment on that tomorrow.

12 MR. HEMSTOCK: I'll have a
13 look at it, sir.

14 WITNESS TEMPLETON: Mr.
15 Commissioner, could I--

16 THE COMMISSIONER: Yes, you
17 explain what it meant.

18 WITNESS TEMPLETON: Only one
19 point. I don't think when I gave my evidence that I
20 said I preferred the coastal route. I think I said
21 I preferred the interior route. The coastal was
22 acceptable because of these other things.

23 THE COMMISSIONER: I understood
24 that then. I understand it now. But I didn't express
25 it very well. Okay, 9:30.

26 (MAP-RECOMMENDATIONS FOR SITE-SPECIFIC TERMS AND
27 CONDITIONS FOR THE ARCTIC GAS PROPOSAL MARKED EXHIBIT
28 834)

29 (MAP-RECOMMENDATIONS FOR SITE-SPECIFIC TERMS AND
30 CONDITIONS FOR THE FOOTHILLS PROPOSAL MARKED EXHIBIT
31 835)

Templeton, Doyle, Hernandez

(LETTER FROM PROFESSOR V. GEIST DATED MAY 25, 1976
MARKED EXHIBIT 836)

(PREPARATION OF SITE-SPECIFIC RECOMMENDATIONS FOR THE
PIPELINE PROPOSED BY CAGPL LIMITED AND FOOTHILLS PIPE
LINES LIMITED MARKED EXHIBIT 827)

(WITNESSES ASIDE)

(PROCEEDINGS ADJOURNED TO OCTOBER 6, 1976)

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BORROWER'S NAME

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MACKENZIE VALLEY PIPELINE INQUIRY

Government
Publications

IN THE MATTER OF APPLICATIONS BY EACH OF
(a) CANADIAN ARCTIC GAS PIPELINE LIMITED FOR A
RIGHT-OF-WAY THAT MIGHT BE GRANTED ACROSS
CROWN LANDS WITHIN THE YUKON TERRITORY AND
THE NORTHWEST TERRITORIES, and
(b) Foothills Pipe Lines Ltd. FOR A RIGHT-OF-WAY
THAT MIGHT BE GRANTED ACROSS CROWN LANDS
WITHIN THE NORTHWEST TERRITORIES
FOR THE PURPOSE OF A PROPOSED MACKENZIE VALLEY PIPELINE

and

IN THE MATTER OF THE SOCIAL, ENVIRONMENTAL AND
ECONOMIC IMPACT REGIONALLY OF THE CONSTRUCTION,
OPERATION AND SUBSEQUENT ABANDONMENT OF THE ABOVE
PROPOSED PIPELINE

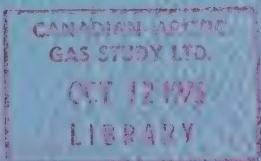
(Before the Honourable Mr. Justice Berger, Commissioner)

Yellowknife, N.W.T.

October 6, 1976.

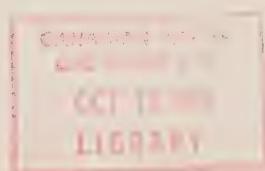
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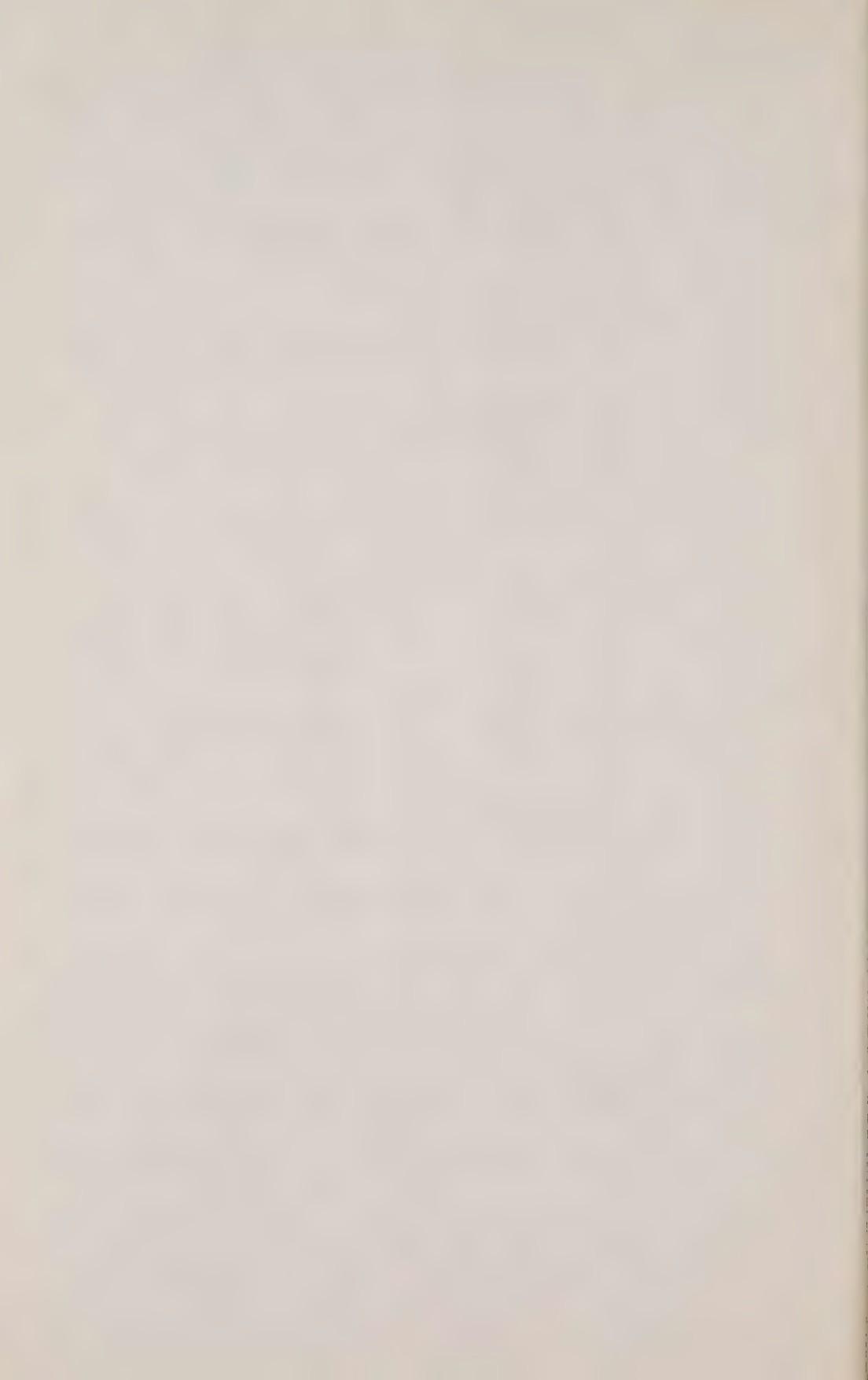
Volume 194



Document
PublicationsAPPEARANCES:

- Mr. Ian G. Scott, Q.C.,
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 Mr. Alick Ryder, and
 Mr. Ian Roland, for Mackenzie Valley Pipeline Inquiry;
- Mr. Pierre Genest, Q.C.,
 Mr. Jack Marshall,
 Mr. Darryl Carter,
 Mr. J.T. Steeves, and for Canadian Arctic Gas Pipe-
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- Mr. Reginald Gibbs, Q.C.,
 Mr. Alan Hollingworth,
 Mr. John W. Lutes, and for Foothills Pipe Lines Ltd.;
 Mr. Ian MacLachlan,
 Mr. Russell Anthony,
 Prof. Alastair Lucas and
 Mr. Garth Evans, for Canadian Arctic Resources Committee;
- Mr. Glen W. Bell and
 Mr. Gerry Sutton, for Northwest Territories Indian Brotherhood, and Metis Association of the Northwest Territories;
- Mr. John Bayly and
 Miss Lesley Lane, for Inuit Tapirisat of Canada, and The Committee for Original Peoples Entitlement;
- Mr. Ron Veale and
 Mr. Allen Lueck, for The Council for the Yukon Indians;
- Mr. Carson Templeton, for Environment Protection Board;
- Mr. David H. Searle, Q.C. for Northwest Territories Chamber of Commerce;
- Mr. Murray Sigler and for The Association of Municipalities;
 Mr. David Reesor,
- Mr. John Ballem, Q.C., for Producer Companies (Imperial, Shell & Gulf);
- Mrs. Joanne MacQuarrie, for Mental Health Association of the Northwest Territories.


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T. Butters
In Chief

Yellowknife, N.W.T.

October 6, 1976.

(PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

MR. GOUDGE: We're ready to begin, sir. This morning we propose to start with Mr. Butters, called by the Association of Municipalities. Mr. Kingsmill of Mr. Sigler's firm, is here representing the Association of Municipalities this morning, and he's going to call Mr. Butters.

Mr. Kingsmill?

MR. KINGSMILL: Good morning, Mr. Chairman. Mr. Butters, will you take the stand, please?

TOM BUTTERS, sworn:

DIRECT EXAMINATION BY MR. KINGSMILL:

Q Mr. Butters, attached to your submission is a witness resume. I wonder if you could highlight that for us?

A Yes, I will, sir. Just before I do, though, I would like to say in reference to the oath I swore, it will be what I believe to be the truth, my testimony will be what I believe to be the truth.

Q We understand that.

A Obviously, some of the things that I provide here may not be the truth.

The resume was drawn up by Murray Sigler yesterday. There are a couple of omissions I notice now. My service for the R.C.M.P. -- R.C.A.F.

T. Butters
In Chief

is not there, two years; and after my discharge and after going to university I was in Europe a year and travelled around Europe and in France, and the other general dates, I think, are fairly close.

Q At the present time you are a member of the Legislative Assembly for the Territories.

A Yes, that is correct, representing the Inuvik constituency at the present time.

Q And in addition you are the editor of the Inuvik newspaper.

A That is correct, sir, yes.

Q All right, you may proceed to read in your submission for the record.

A If I may just by way of preface point out that this document was requested of me by the N.W.T. Association of Municipalities. You will recollect, sir, that I have been in correspondence with you or your Commission counsel over the past two years and have indicated my own interest in appearing before your Inquiry, sir, and I wish to, before this time is over, have a short opportunity to make what would be my own presentation, as you have given me that opportunity. As I say, this is developed at the request of the N.W.T. Association of Municipalities. The parameters they put on me was that it have political, economic relationships and ramifications.

I then will begin to read

T. Butters
In Chief

from the two-page opening remarks to the other material which comes from the material I provide on the Territorial -- in the Territorial Assembly.

The order-in-council on March 21, 1974, outlining the terms of reference of the Mackenzie Valley Pipeline Inquiry specifically directed the Inquiry's attention to the "social, environmental and economic impact regionally, and the specific environmental and social concerns."

That direction notwithstanding, the Inquiry must touch upon and in its normal course of fulfilling its commission, examine evidence dealing with the political impact regionally and Territorially, and political concerns.

The terms and conditions contained in the Privy Council document overlooked, as did the order-in-council authorizing the establishment of the Carrothers Commission, the reality that every vital and dynamic human community is in fact a series of relationships between three distinct yet interdependent communities -- political, social and economic communities of activity and interest.

The material that follows seeks to support and substantiate that view in the main through the medium of replies made by myself in response to the Commissioner of the N.W.T.'s opening address in the Council Chamber over the past five years, recognizing the presumption in trotting out dated positions, I hasten to add the material provided here with is edited through the removal of

T. Butters
In Chief

extraneous material and rearrange chronologically to emphasize the very real political, economic concerns and effects that surround and attend the proposal to construct the Mackenzie Valley natural gas pipeline.

In limiting myself to extractions from replies to the Commissioner's address, I omitted one of the extremely important political-economic concepts raised frequently by myself over the past five years, and one which I have constantly striven to have recognized and adopted by both the Commissioner and his executive members, and the two Ministers of Indian Affairs & Northern Development over the past five years.

I refer to the concept of extraordinary funding for rapid-growth communities. Again, if I may depart from my text a bit, this file contains not a group of texts from material on extraordinary funding, but one letter and its appendages which I sent to the Minister of Indian Affairs, the Honourable Judd Buchanan on April 10, 1975, and I just point that out to indicate that the concern is real and it has been made known to the Ministers on many, many occasions.

This concept and the requirements for its implementation was specifically identified, debated and defined during the 45th Session of the N.W.T. Council on Thursday, June 24, 1971, during the first reading debate on my private member's bill, Bill No. 2545, "Growth Centres Ordinance".

T. Butters
In Chief

On introducing that Bill I reiterated the Carrothers Commission postulate No. 2 which states:

"The competence of political institutions should be commensurate with the dimensions of the social and economic problems in the political units."

Deputy Commissioner John Parker, who served as a member of the Carrothers Commission, ten years ago speaking on Bill 2545 conceded -- and I quote his remarks:

"It seems to me, though, that since there is this need for the identification of special money, special assistance under these types of developmental circumstances, and since the control, if you will call it that, of the development itself, namely this resource development, is largely in federal hands, we need to take our case to the Federal Government and lay it before them. We have to have some idea of what kind of special money may be available, and in what form we are going to be able to put it into the Northwest Territories."

T. Butters
In Chief

The upshot was that I withdrew my Growth Centres Bill as being premature and myself being optimistic that the Federal Government would recognize and eventually provide extraordinary funding to rapid growth communities. Unfortunately the concept of extraordinary funding was never really accepted by the Federal Government, even though successive ministers of the Federal Department of Indian Affairs and Northern Development, the Honourable John Chretien and the Honourable Judd Buchanan, were personally apprised of the need.

Such unwillingness to recognize an accept the need for extraordinary funding, I believe, has resulted in the costs for developing existing service infrastructure in many cases being passed on to N. W. T. municipalities and individual residents. I attribute in large measure the recent exorbitant increase in N. C. P. C. power rates to the unwillingness of the Federal Government to accept final responsibility for the developmental preparations in anticipated rapid growth communities.

More generally, the material extracted immediately following examines briefly:

- a) the evolution of the political community in the Northwest Territories as preceding economic development stimulated and financed it;
- b) fiscal parallels and problems similarly experienced by the first Council of the Northwest Territories between 1875 and 1888;
- c) the genesis of the Carrothers Commission;

T. Butters
In Chief

- d) indications of the changed economic climate in the N. W. T. and the tempest of rising territorial and national expectations that followed the discovery of oil at Prudhoe Bay in 1969, and;
- e) the planning for the economic future of the territories.

The extracts are self-explanatory and are identified only by the date the remarks were delivered and the session number.

As noted above, the first excerpt is the exception in that it is extracted from remarks made at the 52nd Session of Council, a special two-day session convened March 22, 1974, to enable members to examine the proposed Federal Government amendment to the N. W. T. Act, which is our constitution, the constitution of the Northwest Territories.

The amendment provided for the establishment of a Council of the Northwest Territories comprised of fifteen members, all of whom were to be elected by the residents of the territories.

MR. KINGSMILL: Thank you, Mr. Butters. Before you proceed with your community hearings presentation, there may be questions on this submission. Mr. Goudge?

MR. GOUDGE:

Yes, sir. Mr. Butter has indicated earlier that he would like to proceed this way and it's certainly fine by the parties and I'm sure by yourself. Mr. Hollingworth, do you have any questions?

T. Butters
Cross-Exam by Goudge

MR. HOLLINGWORTH: I have no questions.

MR. GOUDGE: Mr. Steeves?

MR. STEFVES: I have no
questions.

MR. GOUDGE: Mr. Templeton?
CROSS-EXAMINATION BY MR. GOUDGE: Q
I have only one question, Mr. Butters, and it's in
response to a matter you and I discussed earlier. You
wish, I think, to comment upon an answer that was given
in response to a question of Mr. Searle when he was
before the Commission several weeks ago. Perhaps you
could indicate to the Commissioner what that response
was and what your comment is upon it.

WITNESS BUTTERS: Yes, thank you sir. I have not seen the transcript, sir, of that particular hearing. I happened to catch about fifteen minutes of Mr. Fraser's report of it and it seemed to me there was a question asked by Mr. Scott of Mr. Searle relative to money that had been approved by the Council to establish a committee to look into the attitudes or reactions of people, especially in the valley, relative to the Mackenzie Valley Pipeline.

If I recollect the interview, the answer was something to the effect that there were politicians on the committee and that's maybe suggesting politicians can't agree, but the reason that committee did not carry out the responsibility which it sought, because I sought it as Chairman of the committee with the concurrence of the membership was a political matter and that occurred in 1974 and you'll remember too

T. Butters
Cross-Exam by Goudge

at that time and I imagine the same consideration occurred to you, that you would not really be moving into the valley until the politicians, the Federal politicians got out.

So, the time that we wish to travel, as you probably are aware the 7th Council ended on the 31st day of January, 1975 and from the time of that approval, we had a matter of months and the first ideal opportunity would have been when the spring hunt was over and people were back in the communities. But on examining the situation, we felt that to go into communities at a time of politicizing was a mistake and as a result, we deferred consideration to the next time which would be the fall and over the summer, we again examined the time left to us, left to the Council, now only six months say, and I think that our consideration was exactly the same as yours in your opening; was that the job that's worth doing is worth doing well. We're not going to get out on the trail and do a poor job and then come back with the report on the basis that it would be irresponsible to spend the money to do a week or two week hasty survey of the communities and then come back and make a report on it.

That was the reason the report was never--first of all, the terms were never carried out and no report was ever made. So, I don't know if that reply was communicated by Mr. Searle, as I say, I got the C. B. C. report of the meeting but that is what happened.

MR. GOUDGE: Thank you, sir.

T. Butters

THE COMMISSIONER: Let's just say that I appreciate very much this brief you filed, Mr. Butters and I assure you that I will read the attachments. Since I hope to go home this weekend, I think they'll take me all the way from Yellowknife to Vancouver on the plane. That's a good place to get work done, I find. I might also say that without necessarily agreeing with your remarks on the obligation of the Commission to look into questions related to political evolution in the N. W. T., I did regard it as essential to read the Carrothers Report and I might tell you that Dr. Carrothers is an old friend of mine. He was a teacher of mine at law school and so I had dinner with him in Montreal last week where he lives now.

I thought that I would spend my time listening to him but I think he spent most of the evening listening to me. At any rate, I appreciate your raising this matter.

T. Butters
Re-examination

RE-EXAMINATION BY MR. KINGSMILL:

Q

All right

Mr. Butters, you can proceed with your Community Hearing presentation please.

A As I mentioned sir,

there's been communication -- I have had communication with members of your staff over the past few years and have indicated my desire sometime to make a presentation. For a long time I envisaged a very lengthy presentation and over the past two years, I must say that it has changed radically to the point now, where I think it can be done in five minutes. I'll try and keep within that time.

The remarks are going to deal with the area and I interpret from your comment on my paper, that you're not accepting as did Dr. Carrothers, the parameters that were laid on you by the federal government in respect to the various communities that you are examining, that the political one is also being examined. Many, many papers that have been presented here have dealt with the political --

THE COMMISSIONER: I'm willing to listen, I'm just saying --

A -- and my remarks are going to be on the political. What is disturbing and I mentioned this last summer in council. What has disturbed me, again we're talking about the political, is that the minister it seemed to me that the Commission Council at one time suggested

T. Ruttens
Re-examination

that the minister should appear and I think the minister's reply was, Mr. Goudge is shaking his head, I thought the minister's reply was that this Inquiry is his Inquiry and he wouldn't appear, but I don't think that excuses the fact that there's much to be answered for by the politicians, by the federal politicians and I was just looking over some of the correspondence last night and in your opening judgment, mentioned your right to subpoena. I don't know if you ever used that, but, you know, I have made recommendations to you before as everybody else has, but I would make a strong recommendation that that power should be used and that power should be used to bring in people who should answer questions that have pertinency to this Inquiry and the ends of this Inquiry and these people, with respect sir, I suggest, would be Digby Hunt. He's an administrator of long tenure with the Indian Affairs Department. He now no longer is a servant of the minister of that department. I think it would be very interesting to have him here. Another man I would suggest would be Commissioner Hodgson. Commissioner Hodgson should have --it is incautious that this Inquiry should sit here and the man who has the responsibility for the administration of these territories is not here. Does not come here, and I think that your subpoena should be used there with respect sir. I think it should also be used and bring in the Deputy Commissioner because really it is two men that run the government in the Northwest Territories

T. Butters
Re-examination

both senior appointies and the other aspect is that John Parker served ably and well on Dr. Carrothers commission and has much to contribute, and he should be here as well. The fourth man I think would be Ewin Cotterill, and I would think that these people because this as you said, this is a historic Inquiry. When we're long dead, I'm quite sure that people will be referring to this Inquiry and I would think it would be and I think you would feel remiss too, if you thought that scholars of a hundred years would say, why wasn't Hodgson there?

I would very much like to see them come and if they did come, I note that in my correspondence on July 27th, 1974, I wrote to Mr. Scott, and I think it was in the terms or the time allowable for interveners to advise that wish to intervene. I've advised that this letter will inform you that I intend to intervene, and I've never done so because time and money takes time, but if those four people did come, I would certainly like to be here to ask them questions.

The second thing I, you know, it seems to me that over the last year and a half, you have been a human wailing wall. You've heard all the ills and problems and just a whole catalogue of gripes. I think sometimes and I hope that this is one of your recommendations or I hope that it's even a recommendation before you go, because I think that maybe -- maybe more of us could look more positively towards the future and has been

T. Butters
Re-examination

the general attitude before. I don't think we've been as positive, I'm talking about northern people as we could be, as we should be. I think that possibly you could tell us before you go that for God's sake, sit down and start talking to one another. Don't talk to me. Don't talk to me, don't bring your problems here. Ninety-five percent of your problems can be resolved if you sit down and respect each other as individuals and human beings.

T. Butters
Re-Examination

Don't ask me to solve them for
you I think it has to be said because I think it's
true that everybody is holding their own meeting in
their own place with the press locked out, and govern-
ment, which includes all the estates, is not really
functioning so I hope you tell us to sit down together
before the press and talk.

I remember about five years ago, I guess, it's always been my observation that people coming newly into the Territories are gifted for a very short space of time of a special insight. They see things which a long-term resident doesn't see. He becomes oblivious to, blinded to, and I like to be in the company of people who come newly into the Territories and listen to them because of the very, very wise things they say. I remember one of the "Edmonton Journal" reporters, Ralph Armstrong, one of his first articles -- and he preceded, I guess, Gord Sinclair -- one of his first articles was he said:

"People of the north don't talk to each other." It was kind of amusing, and I said, "By gosh, he's right," and that is even more true today. A terrible thing.

The third thing, if I can find it, is that -- now this is not a Court room, I don't think it is, and while you are a judge of the B.C. Supreme Court, it's my recollection reading your background that you spent many years as a politician. In fact, you spent a goodly portion of your adult

T. Butters
Re-Examination

life as a politician, besides your legal background. It seems to me that you wouldn't have done that unless you had faith in the system that you had part of, unless you felt that what you were giving to your community as a politician was more important than you could give to your community as a lawyer.

So I really want to talk to the man who was once a politician, in that using the word recognizing that politicians are very, very important people. Politicians are the extension of the common man that makes up our community and our society.

Your Inquiry has been asked, as we heard in Inuvik on three occasions during your opening address, you mentioned to develop terms and conditions under which a pipeline would be constructed, something like that, "terms and conditions". It seems to me -- and this is where I speak to you as a politician or ex-politician -- really the law that the politician makes that is made in the House, the Assembly that goes 700 years back in time, are really terms and conditions, that really govern our lives in the total community.

It seems to me, too, that those terms and conditions had to be changed according to the needs of the people, according to the indications of the people, what those needs are, what protections they need, what they need to enhance their lifestyle or their environment. The politician must be receptive and must move quickly.

T. Butters
Re-Examination

I think this is recognized because in any Chamber there are two aspects of these political terms and conditions, there are the legislative ones, the ordinances, the Acts, and the regulations. My understanding is that regulations exist so that you can even move more quickly than you can summon together a body of members to determine what should be deleted and what should be put on the books of law.

So really what I'm saying here in this long roundabout way, because I feel that the Federal Government has depreciated, has ignored the existence in the Territories of democracy and it continues to ignore it. I suggest to you, sir, that democracy has existed because it works. Nobody can explain why it works. If you tried to defend it on the basis of a new concept, you couldn't because it wouldn't appear to work, but it does work. I am wondering whether or not the terms and conditions shouldn't be such that must respond to need, the need of the moment, the need of unforeseen things. This Inquiry has pointed out that all of the plans of these brilliant engineers and planners, architects and designers get turned around, they have been changed as a result of discussion in this very hall. What is taking place here is people talking, the flow and ebb of concern, and that's why I say democracy works because it reflects and should react to and be responsible to those concerns and those concerns of people.

T. Butters
Re-Examination

So I am wondering if there is some way in which your Inquiry might recognize the existence of a legitimate system of government in the Northwest Territories, a system of government that has been recognized by Canadians, constitutionally acceptable, based on historical precedent, responsive to the people because you can throw them out, throw the rascals out and increasingly it should be more effective in bringing about the wishes of the people. We now have two members on the Executive Council; they should be able to do a great deal.

I asked Mr. Goudge earlier whether or not the N.W.T. Act formed part of your -- and he pointed out to me that it is part of the public domain and you have read it and studied it, because I noticed in many papers that have been brought forward, only certain aspects -- snippets of the Act are brought forth.

But I think in an Act there is sustenance for an embryo of democratic -- of a democratic government.

T. Butters
Re-examination

I think that--in fact, I think that we're beginning to see a little bit of hope but the Federal Government has refused to provide funding that will enable that organization to develop for itself, not to itself, a research body. Native organizations have all kinds of money. In fact, you have given more money to--in fact, there was some suggestions at some time we should approach you. This wasn't made with humour. This was made in dead seriousness and now I wish that we had done so, because we could indicate the idiocy of a situation where legislature has to approach an inquiry to get funds to carry out certain things.

But there is a little bit of hope in the future, I think. In the last session, the motion was passed and it was recommended that if somebody wished to make a presentation to yourself, to your Inquiry and to the N. E. B. and that has been done. Money has been developed to get together the people that would assist members to put together their wishes and thoughts. The only problem is that that was circumscribed because we could only use positions that had been debated and developed in public and we could develop no new positions, but I'm hopeful with that money and with that beginning, we can develop the expertise and get lawyers. We can't hire a lawyer now. We haven't got the funds to hire a lawyer or get a lawyer to look at the N. W. T. Act relative to the Canadian Constitution and determine what our real powers are.

T. Butters
Re-examination

At present, I'm talking about your members of Council, if we had what we'd see as a constitutional anomaly or disagreement, where do we go? We go to the lawyers or the Department of Justice. With respect, I suggest the lawyers is a sophist, a professional sophist and his sophistry or the Department of Justice lawyer's sophistry is to support their master and I think that--what I'm just saying is you would look at the Act and with your political background, and with your legal background, seeing that a constitution, which may guarantee the rights of the northern people, individuals to govern their own destiny, to set their own terms and conditions.

THE COMMISSIONER: Thank you very much, Mr. Butters. I think you've had the full attention of everyone here and there are days when let me tell you, they don't appear to be giving their full attention. That's a tribute of your knowledge of this country and the sincerity and eloquence of your presentation. So, thank you sir.

WITNESS BUTTERS: Thank you.

(WITNESS ASIDE)

THE COMMISSIONER: Maybe,

Mr. Goudge, we could take a break.

MR. GOUDGE: By all means, sir.

THE COMMISSIONER: What's next?

MR. GOUDGE: The resumption of the cross-examination of Messrs. Templeton, Doyle and Hernandez.

THE COMMISSIONER: We'll just

1 stretch our legs for a moment. This isn't our coffee
2 break. That is still to come.

3 (PROCEEDINGS ADJOURNED FOR A FEW MINUTES)

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

(PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

MR. GOUDGE: Sir, we're prepared to resume with the cross-examination of this panel, and I think we've reached Mr. Hollingworth.

Mr. Hollingworth?

CARSON H. TEMPLETON,

D.V. DOYLE,

H. HERNANDEZ, resumed:

CROSS-EXAMINATION BY MR. HOLLINGWORTH:

Q Mr. Templeton, the land use plan document that you've filed and spoke to yesterday makes a recommendation that Foothills should not be permitted to build its line -- the northern 50 miles of its line in the summer. Can you tell me what reading you did before coming to that conclusion and what your reasons are for that conclusion?

WITNESS TEMPLETON: I think the Foothills road and the recommendations was with regard to the road or pad, whatever you call it, was made in the context of a Mackenzie Valley zone and that zone would have no further activity that wasn't absolutely necessary, as far as I'm concerned, because of the tremendous pressures by all segments of the oil industry plus the ancillary services that go with it, and because it's a very, very sensitive area and I don't think we should ever lose sight of the fact that we only have one major delta in the -- in North America going into the Arctic Ocean, so that's the context of which -- that's the way I looked at it, and then I said,

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

"Can they build a pipeline in the wintertime so that
they don't need a pad?"

I came to the conclusion
that you could. It may not be what you want to do and
it may not be as convenient, but I think you can.
There are problems in the cold, as you have pointed
out, and your witnesses have pointed out. There are
certainly problems of welding in very cold tempera-
tures and problems of brittle factors of metallurgy,
but you're going to have those problems south of,
I think your 50 miles takes you round to the Parsons
Lake junction and you're going to have those problems
south of there as well. So you're going to have to
be able to live with those anyway. Certainly I think
you made the point, or Mr. Kosten, I believe, made
the point that the safety problems were greater in
the dark and the cold, and I would agree; but once
again I think those can be handled.

So I came to the conclusion
that you can do it. I don't like to see that much
gravel used if it isn't absolutely necessary. I
think 1,200,000 or something in that vicinity and
so I don't really see the difference between the first
50 miles and the second 50 miles, as far as the
logistics problems are concerned, and we did quite
a bit of work on winter roads at the outset. It
was one of the first things that the Environment
Protection Board did, was study winter roads because
the whole concept was based -- of Canadian Arctic
Gas -- was based on the use of winter roads, and if

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Cross-Exam by Hollingworth

that concept didn't work, the whole project couldn't be done or couldn't be done without really damaging the environment by building it all summer; so we spent a great deal of time on collecting all the data on winter roads and compared a bibliography and worked out some test routes and monitored both the one of Canadian Arctic Gas at Norman Wells and Dr. Adam also looked at -- he didn't have much to do with it, but he looked at the one at Inuvik.

Is that a long enough answer?

Q I just doubled my estimate of my cross-examination time to Mr. Goudge.

Well, you've outlined your reasons, not succinctly, but you've outlined the reasons. The question was two-pronged and it dealt with the material that you've read. Now I take it that you must have read Mr. Kosten's evidence, which has been filed for reading later on this week. Is that what you refer to when you speak of Mr. Kosten's reasons; or have you read any --

A No, Mr. Kosten was here before some time ago, some months ago, and I've just read this morning, he gave me this yesterday and I didn't realize it was on this particular subject and I glanced at it when Mr. Butters was talking so I don't really know it, but I had heard, I guess, through the Energy Board that you were going to build that road and that was why I suggested it should not be done.

Q Well, you're not

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

suggesting that it wasn't announced to this Inquiry?
This proposal.

A Well, I have a very difficult time keeping track of what is done at the Inquiry because I don't get all of the exhibits.

Q Well, are you aware of any proposals that have been put forward for a road from Inuvik to Tuktoyaktuk, a permanent road?

A Yes.

Q And I take it, then, that you're opposed to that as well.

A Yes.

Q For the same reasons.

A Yes.

Q And in saying that Foothills is capable of doing this work in the winter, you're going on your experiences with the Environmental Protection Board, and the research that you did on snow roads.

A And my general experience.

Q And your general experience.

A Yes.

Q Does your general experience encompass winter construction of pipelines?

A Not too extensively, no, but there have been TransCanada Pipeline has built in Northern Ontario pipelines in the winter, and, --

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

1 Q Were you involved with
2 that construction?

3 A No, but I can see what
4 they do and --

5 Q Were you out on the
6 construction project when that was being put in?

7 A No, but it runs from
8 Winnipeg easterly and we have spent a fair amount --
9 well, not a lot of time but we observed this between
10 east of Winnipeg because the Environment Protection
11 Board one time did try to use that as -- observe the
12 TransCanada Pipeline looping project to see what
13 the effects where and the Board was doing it in the
14 summertime. But I don't -- I think -- they didn't do
15 too much in the wintertime but in Manitoba we --
16 conditions, the temperature conditions aren't that
17 unlike this area, and of course the pipelines in
18 Manitoba we deal with are much smaller and much
19 smaller wall thickness. So that the welding problems
20 aren't nearly as great.

21 Q Mr. Templeton, have
22 you in your professional capacity as an engineer
23 ever been involved in any way with the construction
24 of a pipeline in the winter anywhere?

25 A I suppose you'd have
26 to -- what do you mean by "construction"? I think you
27 have to put in, you know for example, I'm having
28 a difficult time trying to analyze what you mean by
29 "construction". A few years ago or perhaps ten years
ago, a pipeline between the TransCanada Pipeline and

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Cross-Exam by Hollingworth

the city gate in Winnipeg broke, ruptured over quite a long time, and this took place in the wintertime, under our supervision. I don't know whether you call that a construction or not, but it had to be welded, it had to be dug and put in place, and there are repairs, you know, being made in the network in Manitoba quite regularly, and there are new industries being put in. Sometimes they have to go and put them in in the wintertime, the services and extensions to lines, this sort of thing.

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

Q I'm talking about your personal experiences.

A Well my personal experience is, that, our company which I started and I don't do that much now, but, was to supervise on behalf of the Manitoba Public Utility Board, all gas installations in Manitoba. We've been doing that since 1959 I think it is. The gas company puts them in with contractors and we -- we monitor it on behalf of the Manitoba Public Utility Board -- Public Utilities Board which has the regulatory authority in Manitoba and so, we make spot checks on all installations in Manitoba.

Q During the installation?

A Well not only during the installation, but any repairs and extensions and primarily to do with safety.

Q And is that work apart from the ruptured line from Trans-Canada to the Winnipeg city gate. Is that work done in the winter or in the summer?

A Well that particular thing was -- was done in the winter.

Q And the other ones?

A You do the ruptures when they occur not -- you know.

Q Precisely? But what about if they're just scheduling some first time installation, that's surely done in the summer?

A Oh yes, of course you

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

do anything in the summer that you could do in the
summer.

Q So then we can come back to this main question. Your experience with the installation or the construction of pipelines in Canada in the winter, is restricted to the supervision of the repair of a ruptured line from the Trans Canada mainline to the Winnipeg City Gate.

A No. I don't -- do you want me to tell you again. That was -- you gave me one example. You said, have you ever had any, I believe you said, and I was saying that that was an example. Now there are all of the things that are going on by a utility company all the time.

THE COMMISSIONER: I thought Mr. Templeton, that you were on the Canol Project. I thought Mr. Hemstock and you built the Canol Pipe-line?

A I don't admit that Mr. Hemstock's contribution was very much. I did work on the Canol Project but, my role on that was not in the conventional pipelining operation. I worked on the tank farm at Norman Wells and then the road and the pipe is small, it was only 4 inch and we just quickly welded up and strung along the side of the road. So it wasn't really a pipelining operation as such. Not in relation to a, say a 48 inch buried pipeline.

THE COMMISSIONER: Oh, I know, but the interesting thing is, that if you read

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about those days and if you see the film that we saw here about a year ago, prepared by Mr. Finney, it was -- it was announced as a project of similar magnitude to the Arctic Gas and Foothills proposals, winning the war and so on, but anyway, I'm well aware that it was only a 4 inch line and I 've -- I went along the right-of-way but it was taken up about 30 years ago, so it must be sitting in a junk-yard somewhere.

MR. HOLLINGWORTH: Q Mr.

Templeton, do I understand correctly, that you're here in your personal capacity as Carson Templeton Esquire and you're not here on behalf of the Environmental Protection Board, or anything else?

A That's correct. Right.

Q Fine. Now, Mr. Doyle, you're a mechanical engineer by training are you?

WITNESS DOYLE: A Yes.

Q And you worked at various industrial engineering positions in Ireland and Norway?

A Yes.

Q What were they?

A Perhaps I -- is there a full resume there sir?

Q No, there is not.

A Well that must be an oversight on my part.

WITNESS HERNANDEZ: I think it's Section 5 in that document you have there.

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

1 THE COMMISSIONER: Yes I
2 think there is.

3 MR. HOLLINGWORTH: All right,
4 it still requires some explanation. You were with
5 the Department of Mechanical Engineering at University
6 College in Dublin?

7 WITNESS DOYLE: A Yes sir.
8 Q And that was as an
9 instructor?

10 A Yes.

11 Q And then you were a
12 production engineer with Jo-Bu Ver Sted in Oslo,
13 Norway?

14 A That's correct.

15 Q And what sort of work
16 were they engaged in?

17 A They were engaged in
18 the manufacture of equipment for the pulp and paper
19 industry in Norway.

20 Q This is the machinery
21 that's used by the pulp and paper industry?

22 A Yes, mostly in their
23 harvesting, in the forest operations, such as chippers,
24 debarkers and that sort of equipment.

25 Q I see. And Geepacks
26 Limited in Dublin was your next assignment?

27 A Yes sir.

28 Q You were there during --
29 sometime during 1964 it seems?

30 A Yes, I started there if

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

1 my recollection is correct in about February and I
2 left in November.

3 Q And what sort of work
4 are they engaged in?

5 A They're in the plastics
6 industry and the manufacture of plastic film, pack-
7 aging materials and I was responsible for production
8 there. It was a operation that was a 24 hour day
9 operations, so there was a production engineer re-
10 sponsible for each shift, you might say and so I
11 had the responsibility for the total clan as it
12 functioned on a particular shift.

13 Q And then you were with
14 Unidare Ireland Limited in Dublin?

15 A Yes sir.

16 Q And what did that in-
17 volve?

18 A Unidare is a multi-
19 faceted heavy industry doing everything from the
20 production of aluminum to a lot of -- right through
21 to transmission line cables, the manufacture of mater-
22 ials for the electrical industry. My capacity there
23 was mostly within the cable manufacturing section of
24 that large industry.

25 Q And then when you came
26 to Canada before joining Mr. Templeton's firm, you
27 were with Building Products of Canada Limited and I
understand they make wall board of reprocessed news-
paper and gypsum and things like that.

A In part sir, yes.

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Initially when I was with them, I was the plant engineer for Fiberboard Manufacturing Plant. I then became plant engineer for a paper mill that they have in Winnipeg and later on assumed responsibility for all the plant engineering when there was a reorganization consolidating a paper mill, a board mill, a roofing mill and a sheeting mill and the production of rock shield for pipeline construction.

Q So that the capital projects you've been involved with would be what?

A In industry?

Q Yes.

A There were many and varied sir. They were from the modernization. We completely rebuilt and refurbished including the building of the fiberboard mill while I was there. We made out a program without interrupting production. We tore the mill down and rebuilt the building and then we went through the total flow system for the stock flow system and we refurbished that, putting in new equipment, new pulpers, pumping systems, water pollution systems, forming machines and a dryer -- a dryer tunnel where the product is dried. That was one and while I was with the paper mill, we did some major updating on those mills. That company just prior to my joining it, had been acquired by Imperial Oil, so it had been a small private company and had of course suffered from a lack of capital investment, so at that time there was a large influx of capital investment and modernization.

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

1 Q Is it fair to say that
2 you haven't been an engineer on a capital intensive
3 project such as this proposed pipeline?

4 A No, sir.

5 Q And you have no experience
6 in the pipeline industry?

7 A No, sir.

8 Q Now, just reviewing this
9 scheme for the agency that you prepared for the
10 Department of the Environment. You start off by
11 suggesting that there be a two year lead time before
12 this agency review any project. Are you suggesting
13 that the agency should be created now, starting now?

14 A I didn't suggest that
15 there be a two year lead time before the agency review
16 anything in the project. I said that there should be
17 a six month period to put together a core group to sort
18 out the modus operandi liaison, et cetera. Thereafter,
19 I said that there should be a nine month period or
20 allowing a nine month period to pull together all the
21 regulations and stipulations that would govern the
22 pipeline and at that point, which is a total of fifteen
23 months, rather than two years, there is a--you're then
24 in a position to review submissions of preliminary
25 designs and final designs.

26 Q That's takes a further
27 four months?

28 A No, I don't think I said
29 four months.

30 Q I'm sorry. After your

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Cross-Exam by Hollingworth

1 fifteen months, you've got a four month period for
2 overall project review and approval in principle?
3 I'm looking at chart 6A.

4 A That particular time
5 slot is not sequential with the others. It's integrated
6 within them.

7 Q It's integrated within
8 the fifteen months you've previously mentioned?

9 A Yes, it may well be.

10 Q Well, do you have 6A
11 in front of you.

12 A Chart?

13 Q Yes.

14 A Could you give me the
15 page number please?

16 Q Facing page 30.

17 A Yes.

18 Q Now, you have years
19 across the top and the first is year minus two and
20 then year minus one.

21 A Yes.

22 Q Now, just to go back a
23 minute; are you proposing that this agency be set
24 up starting now and that this year minus two start
25 running as of this date?

26 A The way I looked at this
27 sir, to answer your question fairly, is I wasn't--I
28 didn't get into the problem of being hung up by time.
29 I didn't put years 1978 or '9 anywhere. I said given
30 the schedules of Foothills and CAGPL to commence their

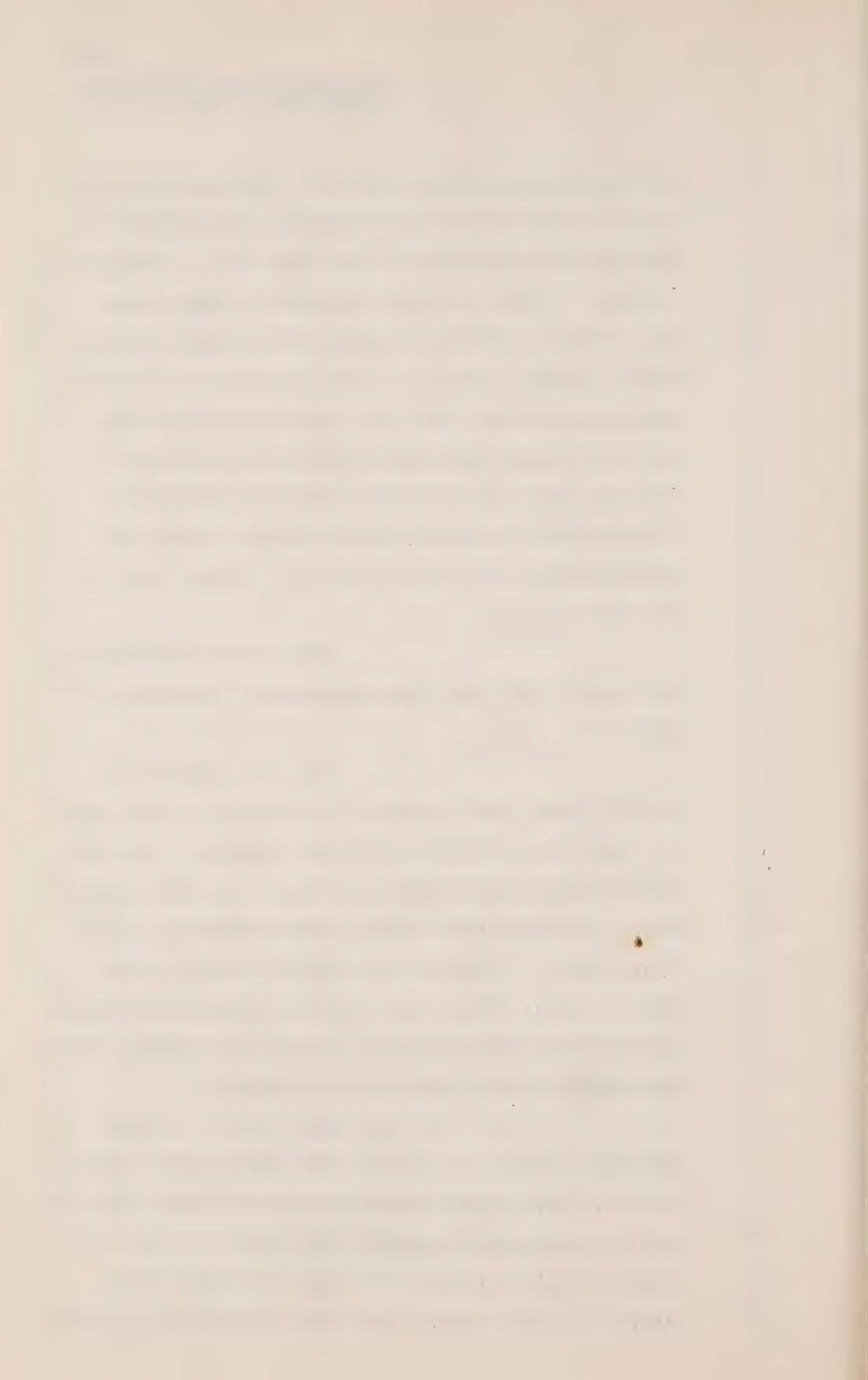
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field activities in let me call it just year one and looked at the construction schedule going ahead from there and then backing up from there with a management strategy, I come to a year minus and a year minus two. I have no dates on those. I'm saying--in the report I said if you put a year context on it and you anticipate getting into doing construction by 1980 then, of course, the twenty-four months that I've indicated here in total required means that there is some sense of urgency about getting on with the establishment of a single agency, if indeed that is the road one goes.

Q Well, as I understand it, you require this lead time before even surveying is done.

A Yes, I'm suggesting there in that same figure on the very top of the page, the first item is called location surveys. Now, the project schedules, looking at figure 6A, which is for CAGPL, indicates that surveys would commence in June of year one. I'm saying that before those surveys actually occur, there are a number of activities which the pipeline company will, of course, go through before they set out their contract for surveying.

The last thing, of course, they will do will be mobilize the survey crew. Prior to that, they'll have tenders prepared on bid; they'll evaluate and award a contract and prior to that, of course, they'll prepare their specifications for carrying out the surveys and I've indicated by a white



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triangle in there that when those specifications are prepared, there should be, from the point of view of environmental control, there should be a review of those specifications.

Q All right. Well, now the mobilization occurs in June of year one and that's two and a half years after the beginning of your chart.

A Yes, sir.

Q And the beginning of your chart is the dates that the agency is set up.

A Yes, sir.

Q So, that if it went from now, this very point in time, then you'd be sometime into 1979, the spring of 1979 before mobilization of the survey crews could begin?

A That assumes that you followed the multi-phased management strategy that I indicated at the end of the report.

Q Using your approach.

A But let me just point something out, sir. One of the requirements, one of the time factors in here is the preparation of stipulations. Now, someone yesterday pointed out that, of course, this hearing will produce many of the rules and regulations to govern the pipeline. So, that effort, in itself, will reduce perhaps the total effort required. Also, I'm aware that a number of people within government are, of course, focusing on the problem of controls for this pipeline and some of that effort is ongoing at the moment.

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So, a management strategy must be updated and revised in the context of where you are currently at. So, for me to say you need a full two and a half years, was within the context of the situation as it appeared to me at the time I did this study. Well, now it's sometime later and you're getting toward the end of these hearings, so part of that time has--some time has passed but some of the effort has been undertaken.

So, two and a half years isn't entirely valid today.

Q You're saying, if I could put it fairly, that the lead time for your agency to get itself together needn't be as long now because there has been work done, propounding regulations and so forth.

A That's correct.

Q I see. Going back a moment, I believe you said the overall project review was in the first fifteen months, as you thought.

A I said that the perspective I took on this and what I've indicated in the report is that there may well be a requirement for the agency to look at the total project. So, I've really just indicated that there may be this requirement for an overall project review.

Q So, you stuck that into your chart as an extra on top of the first fifteen months?

A No, it's within. If you

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Cross-Exam by Hollingworth

1 looked at the manpower tables at the end, you would see
2 that there isn't a box in there for any overall project
3 review. It's really just to show that this is something
4 that may be required and it may be waived.

5 Q Well, all I'm doing is
6 looking at the chart and I see an empty space under
7 year minus two, under twelve full months and I see an
8 empty space under the first five months of year minus
9 one. That's seventeen months and then you have overall
10 project review occupying a further four months.

11 A Umm-hmm.

12 Q Now, is the chart wrong?

13 A No, sir. If you're
14 setting up an agency, I'd suggest that you don't have
15 to do every little activity in a sequential order.
16 One activity doesn't have to be completed when another
17 one is undertaken. For example, if one was in the
18 area of developing site-specific or finalizing site-
19 specific controls, then, of course, you could be
20 undertaking any overall reviews at the time that that's
21 going on.

22 So, the implication of such
23 a review really only reflects itself in staffing and
24 manpower, not in overall timing.

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27

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29

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Templeton, Doyle, Hernandez
Cross-Exam by Hollingsworth

Q I'm not sure I understand that yet, Mr. Doyle. It's still early in the day. You've got this chart and as far as I can see, there is no preliminary activity undertaken with respect to preliminary design before the end of 20 months after the creation of this agency. I'm just looking at the chart and taking it at its face value.

THE COMMISSIONER: Is that not so under the chart? That's all.

A From the information that we have on the project is all taken from the point of construction commencing. We don't have any information that I have seen before this Inquiry as to what the level of engineering planning would be before these field activities occur. So I take the commencement of field activities as given, as defined by the applicants, and I back up from there first through the pre-construction activities, the planning function, and then from there in terms of manpower I take the agency perspective, sir, and say, "Well, you've got to put stipulations together, that takes time." Hence the chart is backed up to year minus 1 for the sake of consistency, using nomenclature. If it would have made you any happier we could have started the chart at June of year minus 1. You got some surplus space there that seems to be bothering you a lot.

MR. HOLLINGWORTH:

Q Well, I understood that the empty space prior to that, so that the agency could get itself together and get its house in order.

A That's how it --

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Cross-Exam by Hollingworth

1 Q That's what the text
2 says, isn't it?

3 A That is a strategy
4 which one could follow in establishing the agency.

5 Q You're saying that that
6 time could be compressed?

7 A Yes.

8 Q Now, in arriving at this
9 scheme, you looked only at the construction plans
10 as originally filed by both Foothills and Arctic
11 Gas, is that correct?

12 A That's correct, yes.

13 Q You didn't look at any
14 updates to those construction schedule that you
15 compiled from time to time?

16 A I looked at the material
17 as of and when this study was undertaken, which was
18 January of 1976, so any subsequent updates have not
19 of course been taken into account. As I indicated
20 in here, the material that I had on Foothills at that
21 time was the -- appeared to me to be of a preliminary
22 nature.

23 Q Yes, and I plan to
24 deal with that in a moment. But the funding for this
25 came from the Department of the Environment, did it?

26 A That's correct.

27 Q You weren't relying
28 on limited funds still left to the Environmental
29 Protection Board to do any of this work.

30 A This had nothing at all

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to do with the Environmental Protection Board.

WITNESS TEMPLETON: I don't really think that's proper to even suggest a thing like that. You're saying we're going to take -- we're implying that we're going to take some funds from Canadian Arctic Gas and use it for -- I think that's--

Q Perhaps, Mr. Templeton, it would be better put if I said you were relying on any expertise of the Environmental Protection Board at that particular point in time. Does that satisfy you?

A Well, the Environment Protection Board was folded up at that time.

Q In January of 1976?

A Yes.

Q Now, in arriving at the scheme, Mr. Doyle, did you take into account normal engineering practice, or normal pipelining practice, or did you consider this solely from the point of view of environmental monitoring?

WITNESS DOYLE: Could you elaborate a little, Mr. Hollingworth?

Q WELL, you've outlined some fairly detailed procedures on how certain things would be done.

A Yes.

Q For instance, you say on page 29 that -- I'll just refer to that -- "Hence we anticipate that the successful contractor would mobilize his forces, then

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Cross-Exam by Hollingworth

receive the detailed designs and specifications to proceed with the job."

Did you take into account whether a pipeline contractor would be prepared to do such a thing?

A What I did here, sir, was say there are two ways to look at these preliminary activities. I think I've indicated, if I referred to say figure 5-B on the bottom of the figure that's facing page 21, I've indicated five activities that are part of the project planning process. Are you with me?

Q Yes.

A Now, in trying to put in a schedule, I wanted to take the tightest possible schedule that seemed reasonable at the time so rather than in some cases -- rather than lay out those planning activities sequential to each other, I really overlapped some of them one upon the other in some cases. For example, I think I talked yesterday in figure 5-A of wharfesites indicated by an arrow I facing page 19 where I said that the preparatory investigations and final design would be two time-consuming events, but at the same time that they were going on, in order to cut the overall time requirements to a minimum the specification preparation -- the bidding and tendering of the job and the actual mobilization of the contractor to carry out that wharf construction -- could be going on at the very same time so that indeed the time requirement would be kept to a very minimum. So that I haven't sort of extended things as much as possible. What I've done is

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endeavored to shorten them up as much as possible.

Q Well, in so doing you haven't taken into account whether a pipeline contractor would indeed be prepared to do such a thing.

A No sir.

Q No. You didn't go out and check with the pipeline contractors as to whether he'd be prepared to mobilize his forces before he saw the final design.

A If he's doing the job on a cost plus basis, there he's supplying machinery, manpower to carryout a job and he's going to get paid for supplying those, and he really doesn't care what he's told to build. He's just supplying the resources to carry the job out.

Q But this again is another assumption you've made.

A Yes, I made that assumption so as to keep the time schedule to a minimum.

Q Just while we have a pause here, Mr. Templeton, let me go back and say that I certainly want to apologize to you if I suggested at all that the E.P.B. would have acted improperly in its application of funds. If I conveyed such a thought, I certainly didn't intend to and just let me say that I'm sure, quite sure in my mind that the E.P.B. did no such thing.

WITNESS TEMPLETON: Thank you.

Q Going on then. On page

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

4-5 of your submission, Mr. Doyle, you're talking about the initial creation of the agency and you start off with a core group of eight persons to establish broad policies, objectives and procedures. Where do you visualize these people coming from?

WITNESS DOYLE: I didn't indicate in the report where they would come from, Mr. Hollingworth. Really that question wouldn't be answered until you decided indeed that you would have an agency and who would participate in such an agency. Obviously at that point you would have defined where you'd be drawing such people from.

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Q Well, you have visualized industry participating in the agency, for instance.

A I haven't visualized industry in the context of the pipeline company, if that's what you mean.

Q That's what I meant.

A No, sir. I haven't visualized that, neither have I examined it and said whether it's desirable or undesirable. I didn't comment at all.

Q Excuse me. In response to Mr. Steeves yesterday, I understood you to say that you would get the agency together, promulgate some regulations; and then say to the pipeline company, here they are, now put in your final design based on these regulations. Did I understand you correctly?

A That's correct, yes.

Q And I certainly took that to mean that there would be no input by the pipeline industry whatever until there was a fait accompli on their plate.

A No, when you say input versus representation, I think they're two very different things. I've indicated that the core group in establishing policy would have to work out with the pipeline company. In fact, communications mechanisms because I've indicated that the pipeline company may well want to adjust its schedules in the light of the requirements that it will have to meet.

So, indeed I see considerable

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liaison between the pipeline company and the agency as it's being formed.

Q All right. But you haven't considered what the experience or particular expertise of the eight core people would be at this time?

A No, I think my sole comment was that they would--to be mission oriented about such a task, you would need people with considerable amount of management expertise and indeed I indicated that these people aren't readily available because they're also probably carrying a considerable work load in whatever their current capacity is.

Q What about the nine senior staff who would join the core people later?

A Well, I've indicated that they would have to be representative of the major discipline areas and disciplines in which these regulations are being brought together.

Q But you have no idea as to where they might come from, particularly from government say or from industry, or would it be a combination?

A Well, I have indicated, sir, that there is a tremendous or there is a growing number of people who have gained tremendous familiarity with this project and, of course, if one could draw upon such a group of people, you would save yourself from a scheduling point of view the time required to change and orient people. So, from a strategy point of

Complete, Inc., Inc., et al.
Cross-Exam by Hollingsworth

view it would be excellent to be able to draw upon such a source of people.

Q What about the forty inspectors who come along next?

A Well, they don't come along next. I think next comes along the people required for design review.

Q Well, no matter who comes, what about the forty inspectors?

A What would you like me to tell you about them? Some of the qualities--some of the questions I've been asked by people which outline the qualities of these inspectors--when I indicated by discussing figure 7, I felt that some of the expertise of these inspectors would need to draw upon would make them equivalent to God; the decisions they might be confronted with if there weren't--

Q That's what troubles me.

A --if there weren't this preliminary review and design. Indeed inspecting such a diverse array of activities in the field with all their environmental implications, to me indicates the necessity of having these preliminary design reviews so that indeed the inspectors will be able to go out and inspect that the work is being carried out in the fashion that had been planned. I further indicated that the inspectors may, because they're going to be ordinary people, with various specialties of their own, that they may well need a group of

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expertise possibly located at sort of regional centers paralleling the pipeline organization. For example, if there was a pipeline regional office centered at Norman Wells, then I could well see that the agency might have, through its Norman Well office, the capability of pulling in particular expertise if there was some problem of local concerns; that he could go out and assist the inspector in examining such a problem.

Q All right. Now, getting back to this question of input by industry, you say on page 26 at the top,

"The preparation of stipulations, however, is not something that can be done overnight. It will require a co-ordinated effort by all those currently involved in a legislative or advisory role".

I understand those in the legislative role. Who are the people you visualize in the advisory role?

A I think the major element there, of course, can be the outcome of this Inquiry. As I envisage the report which the Commissioner will submit to the Minister of Indian Affairs, it will be the Inquiry's recommendations to him. So this, in essence, is advice to the Minister. So, this is a major input.

Q What about industry input? Do you foresee that in that slot too?

A I wasn't exhaustive in

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defining what all these particular inputs would be. My main focus was to look at the timing, key activities and numbers of people. I didn't get into that in great detail. Of course, there is from a practical management standpoint, you've got to confer with the people that you're going to regulate.

Q Some of the activities you plan to monitor on the table 1 that starts at page 40 and goes over the next four pages, is that an exhaustive list or is that a partial list?

A That's a partial list, sir.

Q Partial list. You talk about activity going on simultaneously on four spreads as far as construction goes and four other spreads as far as preparatory work is concerned.

A Yes, sir.

Q Do you feel that forty inspectors will be sufficient to cover all these activities at eight different locations?

A I indicated at the very start of my presentation that in order to produce an output in terms of numbers of people, you must define a level of control. I indicated yesterday in questioning that for each interest group, they well have different levels of control. The final scale of an agency will depend on a decision being made as to what level of control indeed ought to be exercised on the project.

So, what I have done here and what we have done is by no means the last word in

terms of level of control. In order to get an output, you must define some level of control and indeed we did this drawing upon the work of the Environment Protection Board.

Q In light of the updates to construction schedules, which both applicants are putting out from time to time, do you plan to update this report to the Department of the Environment from time to time?

A I have no arrangement with the Department of the Environment to carry on this work.

Q Have you suggested to them it might be a good idea?

A In the normal course of events, I have talked to people that I have done this work for and discussed their current problems with them but we have no undertaking to update this work.

Q You haven't suggested it to them?

A I haven't suggested it specifically, sir, no.

Q Has anyone at the Department of the Environment suggested to you that it might be a good idea to consider?

A In the course of normal chat, everyone has brilliant ideas from time to time but invariably we discuss funding difficulties and priorities and, you know, there the buck rests.

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Q Notwithstanding the funding difficulties, has it ever been suggested to you that it might be a good idea to update this from time to time?

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A I have on my own initiative suggested that I think Mr. Bayly was referring to it yesterday, some seven Task Forces that were defining the level of mandate, or the mandate that different departments were functioning under, and indeed the perspective I took was really relating to one of those Task Forces which was environment. In order to complete the picture one should really do it again in the light of those seven inputs, so it should definitely be updated.

There's one point I should make with regard to the 40 inspectors. I've indicated in the copy that the 40 inspectors does not take into account the rotation of people, vacation, sick leave, or anything else. So that the actual number of people employed maybe more than that indicated.

Q Turn to page 12 of your report. That's where you deal with the issue of Foothills scheduling being of a preliminary nature.

A Yes sir.

Q Did you arrive at that conclusion yourself, or did others arrive at it with you?

A Others -- the group of people that carried on this study, I was but the study director -- arrived at this conclusion and informed me accordingly.

Q Who else was involved with the project?

A The major input in terms

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1 of project scheduling was Mr. Al Myska of Templeton
2 Engineering Company.

3 Q I see. The reason
4 you arrive at your conclusion is because all camps,
5 roads, airstrips and pads are scheduled for completion
6 in the first winter, even though borrow activities
7 continue through the next five years. That's one
8 reason.

9 A Yes sir.

10 Q Are you aware that
11 borrow is used throughout a pipeline construction
12 project for padding for the pipeline?

13 A Yes, I'm aware that
14 there are some borrow activities to produce weights,
15 etc., that go on, yes.

16 Q So borrow activities
17 would have to extend beyond just making camps,
18 roads, airstrips and pads.

19 A Indeed they would.
20 That's true. The quantities of borrow that are
21 required to carry out those things which you've just
22 mentioned are indicated, I believe, within the exhibit
23 in terms of yards of borrow by spread, and when one
24 looks at the harvest operation that would be required
25 to accumulate the volume of material to put in place
26 those facilities, indeed it's the major portion of
27 borrow that's indicated in the exhibit, if my recollec-
28 tion is correct.

29 Q Yes, but volume is not
30 indicated on the bar chart with which you take exception.

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1 It just shows when that activity is going on.

2 A That's right, yes.

3 Q And you will agree with
4 me that it will have to be going on till the conclusion
5 of the project.

6 A Indeed, yes.

7 Q So there's nothing
8 illogical about it proceeding beyond the construction
9 of pads and airstrips, is there?

10 A When you put that
11 interpretation on it, that is not indicated in the
12 schedule of activities. It's in the exhibit. It's
13 indicated as a bar chart for a farther project. That
14 would have become clearer if there had been within
15 the exhibit a bar chart for a typical spread, and
16 there wasn't such a bar chart to show how activities
17 would occur on individual spreads. So the only bar
18 chart we had was the one for the total project.

19 Q You didn't phone Foot -
20 hills for an explanation, I suppose.

21 A No sir, I didn't.

22 Q No, and you also find
23 that a preliminary sort of schedule because all
24 station site preparation will be completed in the
25 first winter.

26 A Yes sir.

27 Q Why do you find that?
28 Why do you reach that conclusion?

29 A Because the actual
30 station construction will go on long after this bar

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chart indicates, even during the operation phase. It seemed to us that looking at the total project that people wouldn't be scheduling activities to occur at the very commencement of a program to put into place sites that wouldn't be used for a number of years. It was putting a constraint upon staffing and manpower and contracts that didn't seem to have been thoroughly laid out within the bar chart, anyway.

Q But you didn't phone up Foothills and enquire about that either.

A No sir, I didn't.

Q Now, if you look at the bar chart of Arctic Gas, which is on the previous page, if you look under borrow and concrete.

A Yes.

Q Now, that activity ends in April of year 4. Right?

A Right.

Q And pipeline installation doesn't end until April of year 5.

A Yes.

Q And station construction goes on past the end of year 6, it seems.

A Yes.

Q Now do you regard it logical that borrow operations would cease so far in advance of those other two activities?

A Well, the station construction here is the actual civil construction of

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1 the plant and the installation of the equipment and
2 facilities. The site preparation for stations, you
3 will note above that, is in three phases, indicating
4 that the station sites are prepared because they will
5 be subsequently used during the actual construction
6 as campsites, I believe. So I --

7 Q You assume that concrete
8 and borrow is not required beyond that time.

9 A No, I don't assume, sir.
10 I'm just presenting the information that was presented
11 by Canadian Arctic Gas.

12 Q And you didn't phone
13 Arctic Gas and check it out with them.

14 A Well, it was their
15 exhibit and I didn't see any reason to phone them.

16 Q What about this other
17 aspect, pipeline installation goes beyond the time when
18 borrow operations cease, you don't find that illogical?

19 A Well, the -- I don't
20 find it illogical in the context of the level of
21 detail I was working at for this report, sir.

22 Q Well, you're working on
23 the same levels of details for Foothills as for
24 Arctic Gas, and yet you seem to find Foothills construc-
25 tion schedule is of a preliminary nature.

26 A Yes, that's true.

27 Q When you come right down
28 to it, you never sought any explanations, you just made
29 assumptions.

30 A I wasn't assuming; I was

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth

1 looking at the information before me, and I was
2 drawing a conclusion from that information.

3 Q But you didn't draw
4 conclusions from apparently illogical set of bar charts
5 that Arctic Gas produced.

6 A I didn't consider them
7 to be illogical, sir.

8 Q I see.

9 A And I didn't say that
10 the Foothills was illogical. I said it was of a
11 preliminary nature.

12 Q Well, sir, you arrived,
13 did you not, at the conclusion that it was illogical
14 that borrow operations would proceed beyond the
15 completion of camps, permanent roads, airstrips, and
16 pads.

17 A For such an extended
18 period, I found that it indicated to me that if all
19 the pads were to be built at one time, that it
20 seemed that the bar chart wasn't of the best.

21 Q But you've never built
22 a pipeline.

23 A Pardon?

24 Q But you've never built
25 a pipeline.

26 A No sir.

27 Q No. Ever built a wharf?

28 A No sir, I haven't.

29 Q How did you arrive at
30 the conclusion that the review of wharf design would

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Cross-Exam by Hollingworth

properly take seven months?

A Where is that indicated,
please?

Q It's on chart, page 19.

Facing page 19.

A I don't see anything on
that chart that indicates the review of wharves would
take seven months.

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Cross-Exam by Hollingworth

Q Well there are two items. Preparatory investigations and design and final design of which together form a period of seven months.

A That's not a review.

Q Just a second. You've got an arrow pointed at it.

A Yes.

Q Now am I correct that takes seven months, doesn't it?

A But it's not a review sir. It's not a review by an agency. This is a-- our estimate of the time that would be involved from a pipeline point of view in scheduling activities. In other words, to carry out the investigations of a wharf site and indeed to carry out the design of that wharf, taking into account what was found at the site investigation together with the detailing of the final design, a reasonable time period in our estimate for that to occur was seven months.

Q And how did you arrive at that estimate?

A These estimates were arrived at, I indicated, that Mr./Myska had a major input in these things and his knowledge is indicated in the report is based upon his years of experience in project management and managing large engineering projects. Where he's dealt with the specific problems of gaining access, scheduling activities and was therefore in the position to

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provide some basis as to a reasonable time frame in which to do things.

Q How did you arrive at your conclusion that snow and ice roads and I'm referring now to Figure 6A, 6B will do just as nicely. Let's look at 6A. You've got a period of a hundred and eighty days there for review and I think I'm correct in using the word this time, review of ice roads.

A Yes sir. I indicated that we are, with regard to the black triangle which all of them indicate 90, I've indicated in the report that we have taken a position of forwarding to the agency for the purposes of arriving at a schedule, a total review period of ninety days. It's an arbitrary assignment, the ninety days. We utilize this figure based on the recommendation within the Environment Protection Board's -- towards an environmental code. They had indicated in there that a period of ninety days should be afforded.

Q It's ninety days for preliminary design and ninety days for final design?

A In terms of the preliminary design review, there are a number of aspects to snow and ice roads. One indicated here, the route selection and the actual design of those, that a ninety day period should be afforded there for the purposes of allowing us to indicate the scheduling of man power. I might indicate sir, that when we -- when you're confronted with the problem of trying to

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place a magnitude on the number of people that might be involved to exercise some control or exercise control on a project, you have to put numbers down in order that you can put a picture together. When I put down numbers, 60 and 30, these are our estimates as being reasonable, they're not definitive that it should -- that there should actually be allotted ninety days or thirty days. That is a matter of leave negotiation and we've indicated that the agency people would indeed be working with the pipeline company in working out the scheduling of sub-missions too.

Q Well Mr. Doyle, I think your ability to answer questions was learned at the foot of the great master. I think your answer came sometime ago. You were relying in taking these figures for snow and ice roads to a certain extent on the experience of the Environmental Protection Board?

A I indicated in here that when we had to make decisions as to how much time you look at the body of information available to you. You can use your inhouse experience or you can use some document that sets forward a system, and we drew upon what seemed reasonable to us. So we drew upon the work that had been published by the Environment Protection Board, we did not in this endeavour at all seek the advice of the Environment Protection Board at all.

Q Okay there was a Mr. Myska in this case, who gave you the figures for

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wharves?

A Did you say, was it Mr. Myska?

Q It was not Mr. Myska in the case of snow and ice roads who arrived at the number of days.

A For the preliminary review periods it was, but the final ones we recognized that the level of effort for a final review might well -- would depend on the overall scheduling difficulties that confronted the pipeline company. It would depend on their level of detail that had been submitted in the preliminary designs, so the final review would indeed be a variable feature and we had no way of knowing what that time might be, so we opted to take a general time period of allotting ninety days and I think the Environment Code indicated to a maximum of ninety days, that the matter might well get accommodated in a lot less than that.

Q What do you foresee happening if the agency can't perform it's review function as you see it within the frame as you see it?

A I don't know what you're trying to get at.

Q Well, you've given a figure of ninety days in most instances for final design review by the agency, is that right?

A Yes.

Q What happens if the successful applicant submits the design and ninety

Templeton, Doyle, Hernandez
Cross-Exam by Hollingworth
Cross-Exam by Goudge

1 days goes past and no word has been heard from the
2 agency?

3 A Well it's indicated
4 that there is a sequence of events and a right of
5 appeal of course to, I believe, the minister.

6 Q As an appeal for no
7 action?

8 A Well of course.

9 Q Well that would be one
10 in legal circles.

11 Mr. Veale is giving me an
12 education back here, excuse us.

13 Do you consider the event
14 of an emergency arising, where say a -- it was re-
15 quired to stab through a mile snow road, a mile long
16 snow road somewhere. What would happen in that
17 instance?

18 A I didn't examine all
19 the trials and tribulations that will inevitably con-
20 front the actual project. My objective was to identify
21 key activities and put some manpower numbers on those.

22 Q Well that's fine. You
23 didn't consider. I want to know. That's the answer.

24 A That's the answer.

25 Q Okay, thank you, I
26 have no further questions.

27 CROSS-EXAMINATION BY MR. GOUDGE:

28 Q Mr. Templeton, let me
29 begin with you sir, in relation to your land use
statement delivered yesterday. As I understood you,

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Cross-Exam by Goudge

in reverting to your previous testimony concerning the Coastal Route and the Interior Route, you indicated that you had previously held the Coastal Route to be acceptable because you felt at that stage, that there would be a need to bring Beaufort Basin gas ashore west of the Delta and that the Coast would therefore be necessarily affected in any case and as a result, you might as well have the Coastal line -- the Coastal mainline. Is that a fair synopsis of your previous position?

WITNESS TEMPLETON: A Yes.

Q Now I'm not quite sure why you've changed that position. Could you perhaps elaborate for me on the reasons why you changed that position?

A Well I think the -- at that time, I was not -- I was not clear on the -- I'm still not too clear on where reserves would occur or where the most likely -- nobody knows where they would occur, but, you have to in a situation like this look on the probabilities and I -- perhaps the easiest way to explain that would be on page -- sketch, slide 14, which is opposite page 9 of the talk that I gave which is appended to that. It has a little map there.

Q Yes, I've got that.

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The outline of the tertiary basin where the reserves will be located will be inside that basin and there's a fault running diagonally northwest through that and although the fault isn't shown on that map, you can see it by the spotting of the wells.

A Do you mean northwest or northeast?

Q Northeast, sorry. And apparently this has a greater chance of having oil and gas reserves and so if there are any fields that they're more likely to be there, they're liable to be anywhere but they're more likely to be there; and if you describe an arc around Taglu, you can't help but come to the conclusion that quite a large portion of that tertiary basin could be taken to Taglu almost as easily or as easily as going to the coast, west of the delta, and so, in my opinion, it reduced the chances of having to go to the coast and I recognize that the tertiary basin does follow along the coast alright, but is very difficult to predict these things and as the Environment Protection Board said it was most anxious to not have a corridor across the northern Yukon, and there's always--even though we're recommending to the Commissioner that he not recommend a corridor, once the pipeline is there, there's more of a tendency to put the other facilities of a corridor.

So, all things considered, it seems to me that you could go to the Taglu fields for most of the area rather than the north coast and

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Cross-Exam by Goudge

run the chances of having the gas discovered at a location where you couldn't go to Taglu? I don't think there is anything in the Inuvik hearings that said how we were going to get the gas from these offshore fields to the shore. So, there are a lot of unknowns yet.

I take it you're discounting or not considering the possibility of gas development in the tertiary basin west of the delta towards Prudhoe Bay?

A Oh, you mean that narrow band like is shown on the map?

Q Yes. You acknowledge that that basin continues westward?

A Yes, I recognize that but the general area and, of course, there may be gas fields in there but it seemed to me that the risk, not the risk, the chances of having were not as great as I had originally thought.

THE COMMISSIONER: Mr. Bayly called a witness, Dr. Shearer, at Inuvik who said that if you follow the line of the continental shelf that pinches in as you move toward the International Boundary, and apparently the basin where the structures indicate that petroleum must be found and to some extent follows the contour of the continental shelf. Dr. Shearer also said that the practical difficulties of getting the stuff out become far more severe once you move beyond the continental shelf.

So, he appeared to agree with

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Cross-Exam by Goudge

you in that he felt the main body of discoveries would likely be north of Tuktoyaktuk and north of the delta generally but not likely extending towards the International Boundary and towards Prudhoe Bay. Now, it's all guess work. That's what he said, wasn't it, Mr. Bayly?

MR. BAYLY: That's basically right, sir, although he did mention that there was a possibility of finding some reserves between Herschel Island and the Mackenzie Bay. It became less likely the further west you went.

THE COMMISSIONER: Right. That was it. But it was the contour of the continental shelf that seemed to loom largest in his considerations.

A I think that the upper line indicated by the northern extent of the tertiary basin does indicate that pinching down towards around Herschel Island.

MR. GOUDGE: I take it, Mr. Templeton, the conclusion you now draw is that because it's not so likely there would be a line of shore west of the delta. In any event, you switched from the coastal mainline route to the interior mainline route?

A I don't think I've switched. I've always preferred the interior and still do, but I don't think the chances of meeting it in the coast are great.

Q Now, Mr. Doyle, in your evidence concerning the regulation of any gas pipeline, you began, as you say, with the assumption that the line

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would regulate only environmental matters. You were asked a little yesterday about the staffing that might be necessary if it were also charged with regulating social matters.

Let me ask you this; in your view, would the regulation of social matters be more or less effectively carried on in the same agency that was charged with regulating environmental matters or would it be preferable to establish two agencies? One with responsibility for environmental matters and one with responsibility to social matters.

WITNESS DOYLE: Mr. Goudge, I don't have an opinion on that. It would be purely my opinion. I looked at the problem from a management perspective of given this, then what.

Q You outlined four steps that would be part of the planning process in the agency that you are analyzing, the pre-planning or the setting up of guidelines and codes and so on, the initial review, the final review and the inspection process. Do I have your four part approach basically correct?

A Yes.

Q Is that, to your knowledge, a usual four part inspection process or regulation process that has been operated for other major projects?

A Well, I don't think we have the experience to look at the consolidating of government control over large projects. We don't have that experience base, to my knowledge, to say this is

1 how you actually go about consolidating things on a
2 one project basis. I'm unaware of any agency being
3 established in Canada to consolidate the control of
4 a large engineering project for all government
5 departments.

6 Q I take it though the
7 four steps that you set out are steps that take place
8 now in the regulation by authorities, though they be
9 numerous of major development projects?

10 A Yes.

11 Q Now, the preliminary
12 design review process that you described, you say
13 could be waived in certain circumstances?

14 A Yes.

1 Q What you're envisaging
2 there, under what circumstances would that step in
3 the process not be necessary?

4 A Well, when you take the
5 body of information as it's been presented here, sir,
6 there may well be within that sufficient detail of
7 what is intended by the applicant to respond to the
8 preliminary design review requirements, and you may
9 well take the findings of this Inquiry and say, "Well,
10 that's been adequate for the purposes of preliminary
11 design review."

12 Q And the next step would
13 be to have the proponent go on to final design
14 review.

15 A Right.

16 Q And you say at page
17 44 of your evidence that that final design review
18 would take place prior to the letting of contracts.
19 Do I understand that correctly?

20 A Yes, that's most
21 desirable.

22 Q By that I take it you
23 mean the letting of contracts by the owner, or the
24 proponent to the people who will build the line, to
25 the people who will supply the equipment and so on?

26 A Right, sir.

27 Q I'm interested that this
28 final design review, which is, I take it, the last
29 vetting step prior to work being done on the site is,
30 in your view, to take place fairly far in advance of

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work being done on the site, rather than closer.
Let me put it this way. If you looked at the Alaskan prototype, would you not find that there was a review process that took place just prior to work being done on the line, and that review process results, I think, in Alaska, in the delivery of a notice to proceed. That notice to proceed is handed out and work commences the next day effectively. Under your scheme, the last vetting takes place at a much earlier stage, namely prior to the letting of contracts. Do you agree with that general analysis of your scheme as compared to the scheme in Alaska?

A I think you've confused the preliminary review with the final review. If we referred to the chart we were looking at a moment ago, facing page 30, you will note that the final review -- that's figure 6-A in the report -- you will note that the black triangle, namely "final review" immediately precedes the field activity. So indeed it is in that respect similar to the Alaskan approach.

Q I take it it then comes after the letting of contracts.

A Right.

Q Well, I was then confused by the statement on page 44 which I read wrongly, and I understand now. So really the proposal you make is close to the scheme that is in operation in Alaska.

A Yes.

Q In that sense. Now at

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Cross-Exam by Goudge

1 page 70 of your evidence, you refer to an appeal
2 procedure and I take it you're obviously of the view
3 that there will have to be an appeal procedure from
4 both the preliminary review and the final design
5 review. Is that correct?

6 A Yes sir.

7 Q Have you given any
8 thought to the detail of that appeal mechanism?

9 A I haven't, no.

10 Q Do you know what the
11 appeal mechanism used in Alaska consists of?

12 A No, I wouldn't want to
13 recount it here; at the time I undertook this study
14 we looked at how the Alaskan thing was organized.
15 We didn't get into the detail of appeal procedures
16 because it wasn't the main thrust of our effort.

17 Q Do you have any view
18 as to whether an appeal procedure to an elected
19 official or to a scientist is preferable?

20 A Well, I think the
21 appeal procedure, of course, must assume a certain
22 structure, and when you look at that structure you
23 evaluate, of course, the appeal procedure. For
24 example, if things are being reviewed at a regional
25 level, then there is a hierarchy within any agency
26 that you can, of course, appeal to initially. It's
27 only when you can't get satisfaction there that one
28 goes beyond the agency itself.

29 So within any hierarchy,
30 within any structure there is in essence an appeal

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procedure there anyway.

Q And I take it you've no considered views on where you would go to appeal outside the agency, you haven't considered that?

A Sorry, could you --

Q You haven't considered where you would appeal to --

A No.

Q -- outside the agency.

A The only indication I have made is that there would be a Minister responsible for the agency, and ultimately if a person is responsible, they are the source of ultimate appeal.

Q The last Court of Appeal would be the Minister.

A I guess after that, one would have to go to the lawyers.

Q Now on page 39, sir, you talk about monitoring and you say that it's obviously desirable that any monitoring function be fed back into the regulatory system. I wonder if you could tell us how you envisage that happening?

A In looking at the monitoring, it seemed to us that there were really two broad distinctions one could make in monitoring. One was we might call it ecological monitoring, which is really contributing to science's knowledge of impacts and effects and their predictions and so on. That is sort of in the -- let me just say in the scientific form. There is other monitoring that relates

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1 to existing regulations, such as the parts per million
2 of BOD or suspended sediments that can be discharged
3 into receiving bodies. Now that type of monitoring
4 is, let's say, of a regulatory nature. So making
5 that distinction, the type of monitoring that we
6 associated or the intent here in this paragraph on
7 page 39, the type of monitoring we were referring to
8 was the -- of the regulatory nature and not of the
9 ecological nature.

10 Q Do you therefore, by
11 implication, exclude ecological monitoring from the
12 functions of this agency?

13 A Yes sir.

14 Q Is it your view that
15 ecological monitoring is not desirable, or that it's
16 preferably done by someone else other than the
17 regulators?

18 A Well, I think the
19 objectives of ecological monitoring are different
20 than the objectives of the agency. The objectives of
21 the agency are to control a project and that's their
22 prime focus. The objectives of ecological monitoring
23 are to contribute to the body of science and to
24 learn from experience, and it is therefore of a
25 different nature, and as such doesn't really come
26 within the focus of prime objective of the agency.

27 Q Let me put this
28 proposition to you, that it's desirable that
29 ecological monitoring be fed back into the regulating
30 agency so that the specifications being administered

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1 by the agency can be altered, if necessary, as
2 demonstrated by ecological change. For example,
3 ecological monitoring may reveal that the specifications
4 being administered by the regulator are not adequate
5 or are more than adequate, and could be changed.
6 Now, unless there's an ecological monitor providing
7 information of that kind to the regulator, there
8 will not be that sort of input into the regulating
9 activity. Is there any merit in that proposition?

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A There's certainly merit

in it, in my opinion. It becomes difficult when you go through the various items that one might be monitoring and it becomes -- you expect to get a reliable output from your monitoring effort, in some cases instantly if you're talking about let's say the disturbance from aircraft or something or other that's an instantaneous output and could well be fed back in. If you're talking about something more subtle, such as people talk about in terms of fisheries and aquatic systems, it may be far more subtle and for them to have confidence in what they are finding, they may need a lot more time. So in looking at monitoring I feel if the monitoring effort can feed back quickly into the control system it's beneficial. If the particular thing being monitored cannot feed back, then my own opinion would be that it seems unnecessary to carry on that effort within the agency.

Q Your view, though, is that if it can be fed back it should be fed back.

A Yes sir.

Q And based on that wouldn't it be desirable for the agency to have an ecological monitoring facility?

A Yes.

Q On page 39 of your evidence you indicate that the agency you describe would have an ongoing function, passing beyond the conclusion of construction. Do I understand that

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1 correctly?

2 A Yes sir.

3 Q Have you formed any
4 views as to where the temporal line is drawn and the
5 agency passes its responsibilities back to existing
6 control mechanisms?

7 A Not definitively. In
8 estimating manpower requirements we got to the end
9 the
10 of/construction phase and recognized that there
11 were maintenance activities that would continue, and
12 we indicate some level of effort required in there.
13 However, someone brought up yesterday the subject
14 of looping would cast things in a different light.
15 So I have just indicated or recognized that control
16 would pass back to the -- to other government depart-
17 ments after an appropriate time. I haven't defined
18 what that would be.

19 Q So there's that problem
20 that the future holds to unravel. There as well, I
21 take it, would be the problem of meshing this agency
22 while it was in existence with the regulation of
23 the same project south of the 60th Parallel.

24 A Indeed, yes.

25 Q Have you given any
26 thought to that problem?

27 A Well, the level of
28 thought given to it was not extensive. In undertaking
29 this study we were discussing whether or not we
30 should indeed be taking that into account, and we
 recognized that it was a very difficult question to

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wrestle down with in the time frame of this study, in the three-month period, and that it was complex, it would be difficult, it would require a lot of discussion and negotiation, and that we should really leave it out of this study.

Q On page 72 you've discussed certain problems that will surround the life of the inspection staff in this project -- sharing construction camps, climate, fishing trips and so on. I take it that you simply raise that as a problem. Let me ask you if you can help us with solutions for that kind of problem?

A I think Mr. Templeton might have a greater base of experience from which to assist you on that.

WITNESS TEMPLETON: I think you wanted a short answer, that's the problem.

Q What's your view on that, Mr. Templeton?

A Well, I think you have to recognize this is a very serious problem when you're living in a camp that is provided by contractors and pipeline companies. But I think the size of the regulatory staff is such that they would have to -- you'd have to try and maintain sort of an arm's length -- I'm not sure that's the right term, but you'd have to maintain some isolation and it's not at all unusual to require that housing facilities, trailers or whatnot, be provided for the regulatory staff separate from the -- you wouldn't want to put

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the men in the same bunkhouse, for example, as the people. You like to try and maintain some kind of separation for them, and you'd have to specify very clearly the logistic -- how they can get around. I think Dr. Wilimovsky pointed out the problems in Alaska where they wanted to look at things but there was never any truck available for them to go and look at them. So those things can be handled by -- in the specifications for --

Q Separation of living quarters ensuring --

A -- ensuring logistic mobility, yes.

Q Anything else that occurs to you?

A Those are the main things, I think.

Q Let me ask you this. What about the rotation of inspectors on a regular basis from spread to spread? Is that a desirable means --

A Well, I think that will come anyway because undoubtedly the inspectors will be rotated for rest periods anyway, and in all probability they may not go back to the same spread.

Q Well, let me suggest to you that it is desirable to rotate them, although the trade-off made presumably is that the inspector arriving on a new spread lacks a certain information

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base.

A Yes, indeed you have to be fairly careful because if, for example, you're going along the North Coast, the inspector might be trained quite extensively in things like birds, waterfowl, that a person in some other spread might not have that training, so I think you can maintain a separation. It's not at all unusual. In the engineering business this is done all the time where the supervisory staff on behalf of the owner, the engineering supervisory staff have the same problem. So -- and in addition to the inspectors that Mr. Doyle is talking about, will be the other inspectors to look after the other regulatory aspects. So there would be a fair number there and I think they could maintain their isolation.

Q Now, you were asked yesterday a little about -- Mr. Doyle, you were asked about enforcement techniques. I take it the agency and its inspectors would, in your view, obviously have the power to bring transgressions before the Courts, the power to deal with the bonds that may be posted, and as well the power in the last resort to shut the project down. Is that a fair recitation of their series of powers? Or are there others?

WITNESS DOYLE: No, I think so, sir. In discussing this with some people I have found the opinion that people within one agency can delegate an authority or responsibility to look after their interests, let's say a fisheries

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1 officer. However, the parent department maintains the
2 legislative mandate for enforcement, so you know, that
3 whole subject area is something that really has to be
4 worked out in detail.

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O I take it you've not concentrated on analyzing the alternatives?

A No, sir.

Q Now, lastly, Mr. Doyle,
have you given any thought in reviewing the activities
of this agency to the possibility of what I could call
third party involvement in the agency? That is,
participation in the regulatory process by interest
groups, community groups, environmental groups as a
matter of institutional structure? Have you given
any thought to that, and if you have, what are your
views on the practicality of third party involvement
in a regulating agency?

A I haven't considered it to any depth, sir. I believe it's important that an agency have a prime focus and that that goal be translated into objectives and a strategy for going about its job and I think that the more you cloud this by putting in other interests and other objectives, the more difficult the task of the agency will become?

So, my personal preference would be to keep the agency goal oriented and not to try to bring into it a lot of other interest groups that have other objectives and being there.

MR. GOUDGE: Thank you, sir.

THE COMMISSIONER: Well, thank you very much, Mr. Doyle and Mr. Templeton and Mr. Hernandez, and we all appreciate the trouble you've gone to to give us your views on these subjects and

I know, Mr. Templeton, that with the disbandment of
the Environment Protection Board, you have undertaken
these appearances in preparation of this material
in your private capacity and I want to thank you for
that, and I think I speak for all of us in saying that
is an admirable exercise in good citizenship and we
all pay tribute to you for that.

We invite you to return, sir,
on November 15th to get your last crack at this thing.
your last crack at me.

WITNESS TEMPLETON: I'll
try to be more brief next time, sir.

(WITNESSES ASIDE)
THE COMMISSIONER: Well,

where are we now, Mr. Goudge?

MR. GOUDGE: Well, sir, we're
unfortunately fogged in in Hay River. The Beaufort
Delta people that I would like to present to you first--
I think it makes more sense to have their evidence
before Mr. Hemstock is cross-examined on his material.
I have this note that they're stranded in Hay River
because of fog in Yellowknife but we'll probably get
to the hearings by 2:00.

What I suggest, sir, is that
we break for lunch now, take an hour and a half and
see where we are then. If they're here, I would
suggest, sir, that we begin with them and they can
read their evidence and then be subjected to cross-
examination. If they're not here, I would propose,
although I haven't talked to Mr. Steeves or Mr.
Ziskrout yet, but Mr. Hemstock present himself to be

1 cross-examined on the five documents that he's
2 accompanied by and that in either event, we attempt
3 to accomplish both those tasks this afternoon, in
4 whatever order.

THE COMMISSIONER: And could
you tell me what is supposed to happen tomorrow again?

MR. GOUDGE: Well tomorrow,
sir, we begin with the Foothills summer construction
panel and we follow that with the Arctic Gas winter
construction panel. I think, sir, that both those
may be able to be accomplished tomorrow.

THE COMMISSIONER: What does
that leave for Friday? Travel?

MR. GOUDGE: Yes, sir.

THE COMMISSIONER: Okay.
Well, let's come back here at 1:30 and see what's
cooking.

MR. GOUDGE: Let's say 1:45,
sir.

THE COMMISSIONER: Yes, okay
1:45.

(PROCEEDINGS ADJOURNED TO 1:45 P.M.)

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(PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

MR. GOUDGE: I think sir, we're prepared to resume. I propose that we begin the afternoon with Mr. Hemstock. Mr. Hemstock will be delivering evidence for Arctic Gas relating to the corridor concept for parallel transportation and communication modes and in addition, has agreed to respond to any questions the participants may have on four reports which have been filed with the Inquiry by Canadian Arctic Gas, one dealing with contingency plans, one dealing with fuel spills, one dealing with monitoring and one dealing with archaeological salvage methods. Mr. Hemstock needs neither to be sworn nor qualified sir, he's as you know been here before.

MR. STEEVES: I might mention that Mr. Hemstock is represented by counsel here.

MR. GOUDGE: Ably represented I should say, sir, yes.

THE COMMISSIONER: Does that account for Mr. Templeton's presence here today?

MR. STEEVES: I'm glad I was allowed to get a word in.

R. A. HEMSTOCK: resumed

WITNESS HEMSTOCK: With respect sir, I don't see how I can possibly win, this afternoon.

MR. STEEVES: If you don't want me, I'll leave. DIRECT EXAMINATION BY MR. STEEVES: resumed

RUSSELL ALEXANDER HEMSTOCK, Mr. Hemstock, do you have

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before you, the summary, statement of your evidence that was filed and I'm not sure of the exact date. Could you give me the date?

A No, I'm sorry, I can't. It was filed several months ago. The corridor concept for parallel transportation and communication modes.

Q Well would you turn to your evidence please. Perhaps you'd better read it, I'm not certain that everyone here has a copy.

A First I might explain that this was our attempt to respond to the requirements of the pipeline guidelines and I'll just begin with a few general remarks.

In a modern economy, transportation normally accounts for up to 25 percent of a nation's production effort. Since Canada is such a large country, transportation requires a relatively larger portion of the GNP, and especially in developing areas such as the Arctic, there will be an even larger proportionate charges for transportation.

The corridor concept with regard to transportation and communication was introduced ⁱⁿ land use planning to improve the land utilization, to lessen environmental impact, to reduce costs and to improve efficiency. The concept has long been applied in urban areas but has only recently been extended to the development of rural and frontier areas. It is now being considered particularly with regard to the movement of natural resources, to market areas.

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The corridor concept requires the placement of all transportation and communication facilities in a single corridor to optimize land use and minimize overall environmental impact. The corridor does not necessarily have a defined width and optimum placement of the facilities in it is not always consistent with the closest possible spacing of those facilities. As applied to the movement of petroleum from the Arctic areas of North America, there are three major corridors proposed, or being developed. There are, the Alyeska corridor across Alaska, the proposed Polar Gas corridor from the Arctic Islands to markets in eastern Canada and the proposed Mackenzie Valley corridor. The latter is being considered as a location for pipelines to move gas and possibly oil from the Mackenzie Delta to southern markets. In addition to the trunk corridor up the Mackenzie, there is a lateral corridor proposed across the northern Yukon to Prudhoe Bay to tie in the gas reserves of the Prudhoe Bay area to the Mackenzie corridor. This corridor would not necessarily have other facilities in it.

The -- as I mentioned, the this is in response to the guidelines for Corridor Planning, and the government has provided those in the expanded guidelines for Northern pipelines June 28th, 1972, and the Government of Canada is prepared to receive and review applications to construct one truck oil pipeline and/or one truck gas pipeline with in the following broad corridors.

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1. Along the Mackenzie Valley region in a broad sense from the Arctic coast to the provincial boundary.
2. Across the northern part of the Yukon Territory either adjacent to the Arctic Coast or through the northern interior region from the boundary of Alaska to the general vicinity of Fort McPherson, and thus to join the Mackenzie corridor.

To confine the environmental and social disturbance arising from pipelines and their construction to a limited area, trunk oil and gas pipelines within the corridors outlined in 1 above, are to follow routes that are as close together as is consistent with the differing engineering constraints and environmental hazards of the two types of pipelines, but not so close together as to bring about undesirable environmental interaction between the two lines. The same principle is also to apply where the trunk pipeline route lies parallel and near to a present or proposed highway or other overland communication system.

3. In view of the influence of the first trunk pipeline in shaping the transportation corridor system, and in moulding the environmental and social future of the region, any applicant to build a first trunk pipeline within any segment of the corridor system outlined in 1 above must provide with his application, first the assessment of the suitability of the applicant's route for nearby routing of the other pipeline, in terms of environment and social and terrain engineering

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consequences of the other pipeline and the combined effect of the two pipelines; fully engineered proposals concerning the other pipeline are not necessarily required.

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Assessment of the environmental-

social impact of both pipelines on nearby settlements or nearby existing or proposed transportation systems, and; the comparison of the applicant's proposed route with alternative pipeline routes, in terms of environmental and social factors as well as technical and cost considerations, again fully engineered proposals concerning alternative routes are not necessarily required.

The Mackenzie corridor is a natural transportation artery based on the great river which, like those north-flowing rivers of Russia, has for decades provided transportation into the Arctic. As the western Canadian Arctic developed, the initial transportation along the river has expanded in roughly the following sequence:

1. The native use of the natural corridor for travel on foot by dog team and by boat, and by snowmobile.
2. Commerical barge and boat transportation which began in the early 1800's with the first large usage by travellers to the Klondike at the turn of the century. There was a dramatic increase in freight in the early '40's due to the Canol Project and then from 1950 a slow growth to just over 100,000 tons per year in 1967. The exploration requirements of the petroleum industry raised total freight moved by barge to about 450,000 tons per year in 1972.
3. Transportation by air - first using lakes and rivers for float-equipped aircraft beginning in

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1 1920 and expanding to scheduled air services as
2 far as Aklavik in 1929. By 1934, the Mackenzie
3 corridor was by far the largest in terms of air
4 freight in the world. It was served by Canadian
5 Airways Limited and the following figures for
6 1934 illustrate the importance of the Mackenzie
7 Corridor:

8 All the U. S. carriers combined moved
9 3,449,675 pounds of freight.

10 Imperial Airways, which included routes
11 to South Africa and the Far East moved
12 2,578,400.

13 Canadian Airways moved 5,766,691 pounds.

14 THE COMMISSIONER: Imperial
15 Airways was a British carrier, I take it.

16 A British carrier, yes.
17 Canadian Airways then carried sixty-seven percent more
18 air freight than all of the U. S. carriers combined.
19 In the 1940's, the war effort resulted in the estab-
20 lishment of airfields to supply the Canol Project and
21 northern military installations. In the past fifteen
22 years, there were some 1,420,200 aircraft movements
23 and some 418,000,000 pounds of freight and 1,929,486
24 passengers moved along the corridor.

25 4. Winter roads - as early as 1919, motor vehicle
26 operations using tractor trailer combinations
27 commenced on the Great Bear River portage. In
28 1921, the Fort Smith portage was motorized.

29 During the 1930's, many winter roads were used
30 to serve the mining industry and in the 1940's

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there was extensive use of winter roads supporting the Canol Project. The Fort Simpson-Inuvik toll road operated for four years up to 1974 and there were 4,705 commercial moves along that road.

Private and government vehicles were not counted.

5. Communications go back some 50 years to 1922 when the Royal Canadian Corps of Signals was sponsored to set up radio stations as far north as Herschel Island. Radio teletype was introduced in 1952 and in 1957 the Dewline communication centers became operational. In 1963, construction began on the 916 mile landline from Fort Providence to Inuvik. This was completed in 1966 and includes a twenty-five foot right-of-way the full length of the corridor, which is located an average of some five hundred yards from the east bank of the river over most of its length. A new CNT microwave line, now in the third year of construction, is expected to go on line to Inuvik by July or August of 1976.

The future modes: The Mackenzie Highway is scheduled for completion to Wrigley and is completed from Inuvik to Arctic Red. Partial clearing throughout the right-of-way has been accomplished. The gas pipeline is a proposal for an early start and the oil pipeline and the railway are future.

As the guidelines indicate, the Government of Canada has recognized that the Mackenzie Valley is an established transportation

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1 corridor and the merits of various alignments within
2 the broad valley region have been described in the
3 Arctic Gas application and in hearings before you, sir.
4 Similar recognition and extensive discussions have also
5 been devoted to alignments through the northern part
6 of the Yukon Territory, either adjacent to the Arctic
7 coast or through the northern interior region.

8 By its past actions, the
9 government has already defined a corridor in the
10 Mackenzie Valley along the east bank of the river.
11 These actions include the installation of government-
12 owned or controlled facilities such as the barging
13 system, the airfield, telephone lines, winter road
14 and the permanent highway. In view of the extensive
15 evidence put forward by many environmentalists that
16 the main potential impact will come from improved
17 access and that the environmental impact of a gas
18 pipeline will be an order of magnitude less than that
19 of a highway, it is difficult to understand the
20 importance assigned by the pipeline guidelines to the
21 influence of the first trunk pipeline in shaping the
22 transportation system and in molding the environmental
23 and social future of the region.

24 In fact, the Mackenzie Corridor
25 has already been defined out the potential incremental
26 impact of the pipeline will be small in comparison with
27 that of the facilities already in place, providing that
28 the work is carried out in accordance with the
29 procedures previously outlined by Arctic Gas to this
30 hearing. Arctic Gas has, during the study of the proposed

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1 pipeline routing, consulted the Mackenzie Valley
2 Pipeline research report, have met with government
3 highway officials, and has also discussed with the
4 Beaufort Delta personnel the matter of routing. Talks
5 have also been held with other agencies in the corridor.
6 That is the barge companies, the communications and
7 the air transport companies all toward the utilization
8 of facilities along the corridor.

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On the other hand, it is clear that the same factors that have brought the corridor to its present stage of development are also supportive in determining the location of a trunk pipeline in the corridor. These factors involve consideration of terrain, geotechnical, engineering, and environmental concerns.

The major feature of the Mackenzie corridor from a geotechnical and terrain standpoint is its presence of permafrost. As has been noted, permafrost is sensitive to disturbance in which the thermal regime is modified. Thus terrains which may be sensitive to a facility which has a warm oil line may not be sensitive to a refrigerated gas pipeline.

The interaction of a chilled gas line with a nearby hot oil line must be considered. Potential problem areas would be limited primarily to sloping ground where the pipelines are in close proximity. No problem would be encountered with thaw stable soils, but soils which are not thaw stable may experience problems with slope stability or erosion if the two lines are sufficiently close so that the effects on terrain of one influences the other. There are certain terrain and topographical conditions wherein one line could be constructed without experiencing difficulty, but two lines in close proximity could interact in a manner that could affect terrain and pipeline stability. Either a chilled gas pipeline or a hot oil pipeline could also interact with a highway and

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1 could affect the stability of the terrain.

2 The amount of sloping ground
3 traversed by the chilled gas pipeline is relatively
4 small. Where steep slopes are encountered, the pipeline
5 will traverse them at approximately right angles to
6 the contours in order to minimize the disturbance to
7 the slope. The proposed route, therefore, has very lit-
8 tle side slope construction. In total, the amount of
9 sideslope which is greater than three degrees inclina-
10 tion is approximately 7% of the route length between
11 Travaillant Lake and the 60th Parallel. An examination
12 of gas pipeline route along the entire length does
13 not indicate any area where the gas pipeline would
14 impede construction of either a highway or a hot oil
15 pipeline or any area where interaction would be a
16 major design consideration.

17 There may be an optimum spa c-
18 ing of modes within the corridor with regard to such
19 aspects as drainage, and as well there may well be
20 aspects of timing with regard to the impact of
21 drainage disturbance.

22 Borrow requirements in the
23 vicinity of the corridor are another important con-
24 sideration and the construction of the first pipeline
25 will provide for the second a better analysis of ter-
26 rain conditions and a better evaluation of quantity and
27 quality of borrow material available for future
28 pipelines. Two pipelines in a single corridor will
29 require the opening of less borrow pits than would
30 be the case if the lines were in separate corridors.

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1 Now for the matter of engineer-
2 ing. The various modes of transportation have widely
3 varying engineering requirements. River and air trans-
4 portation require only key sites at widely spaced
5 intervals for off-loading and refueling. The highway
6 and pipelines have differing requirements in regard
7 to the amount of materials required, acceptable grades,
8 etc.

9 Because of high capital costs
10 for a pipeline, one of the principal considerations is
11 that the line follow the most direct route from source
12 of supply to the delivery area. The Mackenzie Valley
13 corridor fits this objective very well with respect
14 to the gas reserves in the delta and the potential for
15 future discoveries along the river.

16 A basic idea behind the corri-
17 dor concept is that savings will result from multiple
18 use of facilities. Facilities where common use by
19 both gas and oil pipelines is feasible include wharves,
20 airstrips, access roads and staging sites. There may,
21 in addition, be advantages for a gas line and an oil
22 line in a common corridor arising from savings in
23 monitoring and inspection, use of joint or backup
24 communication facilities, and a possible joint use
25 of some maintenance equipment and use of gas to power
26 the oil line.

27 The construction of the first
28 pipeline will provide a better understanding of the
29 potential construction scheduling requirements for
30 future pipelines.

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For the environmental factors, they may have an additive or synergistic effect, depending on the nature of the impact. It is my opinion, based on the extensive studies conducted along the Mackenzie Valley, that there is little likelihood of synergistic impact as a result of the construction of the gas line or of the oil line after the gas line.

Vegetation has been analyzed over a broad corridor along the Mackenzie and there are no areas where great difficulty is anticipated in stabilizing and revegetating the right-of-way. Since the two pipelines will be in separate rights-of-way, there should be no conflict nor should there be any environmentally significant incremental effects. We recognize that a refrigerated line and a warm line are best suited to somewhat different terrains, however each will at some location meet all of the terrain factors encountered by the other.

Fisheries. The impact of the gas pipeline on the fish population is expected to be minimal since the construction will be completed during the wintertime, and since there will be minimum disturbance to stream beds as a result of the pipeline crossings.

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This assumes, of course, that the work is carried out in accordance with the mitigative procedures outlined by Arctic Gas. Although the details of the oil pipeline construction are not yet available, one would anticipate winter construction may also be used, and that the impact of construction would be minimal. One difference is that a break in the oil line may involve the spillage of a quantity of crude oil, and should this enter water courses, there would be a short-term disruption of the stream. As for the oil pipeline, the experience in North America shows that many oil pipelines are operated year after year without failure, and that furthermore, industry has already undertaken extensive contingency planning and has equipment in place so that the impact of oil spills would be restricted to relatively confined areas. Assuming all appropriate mitigative measures were taken, the impact of the two lines would be small and would be additive.

Along the Mackenzie the main potential impact of both the gas and oil lines/will be the effects of disturbance. Travel by land and air will increase due to the installation of a gas line. The number of flights required along the corridor would be further increased with the addition of an oil line. It is preferable that these flights be confined to a single corridor so that through co-operation between the two pipelines, the number of flights will be reduced to a level less than that required if the two lines were situated in separate corridors and monitored separately.

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1 There may be a potential
2 impact on bird life if oil spills occur, however again
3 the area affected would be limited.

4 The gas line is expected to
5 have little or no impact on mammals, with the main
6 potential being increased access and disturbance.

7 It is noted, however, that the
8 corridor is already the axis of a great many activities
9 as outlined above. A buried pipeline will create little
10 additional impact. The oil line will similarly bring
11 little additional impact with the only difference
12 being that it will probably have several segments where
13 the line is above ground. This poses a potential problem
14 in that it could be a barrier to some movements of
15 wildlife, however it should be noted that the Mackenzie
16 River is in itself at least a partial barrier to free
17 movement and the location of an above-ground pipeline
18 is logical in a closely parallel corridor.

19 The impact of the two lines
20 will be small and will be additive.

21 For other considerations, in
22 socio-economic affairs, the joint use of facilities
23 and of certain towns as operating headquarters will
24 provide a greater opportunity for co-ordinated planning
25 with both governments and local people. The presence
26 of the two facilities will provide greater scope for
27 employment and may make certain business ventures more
28 viable in the northern setting.

29 Both pipelines will require
30 cleared rights-of-way and above-ground operating pump

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1 stations. The locations of the pipelines in the al-
2 ready disturbed portion of the Mackenzie Valley will
3 reduce the potential aesthetic impact of the installa-
4 tions. The addition of the oil line will have little
5 additive aesthetic impact although, as noted, parts
6 of it will likely be above-ground.

7 For archaeology, the installa-
8 tion of the gas pipeline with the required archaeologi-
9 cal supervision and salvage will provide detailed base-
10 line of information regarding archaeological resources
11 along this corridor. The installation of the oil line
12 or any other subsequent development will be facilitated
13 by this additional information, and again little
14 additional impact is anticipated.

15 Now for the Yukon coastal
16 corridor, this corridor is also a natural corridor
17 for transportation but it has not had the same degree
18 of modern development as has the Mackenzie Valley
19 corridor.

20 The historical modes include
21 . the prehistoric times when the Arctic Slope
22 was used as a travel corridor by native people.
23 . Barge and ship traffic which has moved along the
24 Beaufort Sea coast since whaling began in the early
25 -- in the area nearly a century ago.
26 . In the mid-'50s, airfields were developed at
27 the DEW Line stations to provide transportation access
28 to these stations. Much of the traffic came from
29 bases in the south, however there were east-west
30 flights into Nicholson, Atkinson Point, Tuktoyaktuk,

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1 Tununuk, Shingle Point, Stokes Point, and Komakuk.

2 Each of these sites had in the early years average tra-
3 ffic of two flights (four aircraft movements) per week
4 by DC-3 and five flights (10 aircraft movements) per
5 day by C-46 and smaller. This activity totalled over
6 3,800 aircraft movements per site per year or about
7 15,000 per year from the eastern edge of the delta
8 to the Alaska border. They continue on^a limited basis.

9 . There has been no commercial use of winter roads,
10 along that corridor, but winter travel by mechanized
11 vehicles has been a feature of geophysical and explora-
12 tion drilling work, together with the occasional move-
13 ment of equipment and people to and from Alaska.

14 The future modes include the
15 gas pipeline, as a proposal for early start, and
16 there's no proposal for a highway along the Yukon
17 coast, nor for an oil pipeline, nor do I think there is
18 any reason at this time to believe that these facili-
19 ties will be required.

20 Now I believe that the
21 terrain and geotechnical features and the engineering
22 comments made for the Mackenzie corridor would apply
23 basically to the Yukon corridor.

24 From the environmental aspects
25 for vegetation, we have analyzed that over the North
26 Slope of the Yukon. The area will be more difficult
27 to revegetate than the more southern sections of the
28 right-of-way, but experiments show that the land surface
29 can be stabilized and that certain grasses can be
30 established. The gas line is expected to have little

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1 impact on the vegetation of the area. Because it
2 would be warm, an oil line along this corridor would
3 tend to have a different right-of-way requirement,
4 however the revegetation problems would be no more
5 difficult and any potential impacts should be
6 additive.

7 The fisheries, the potential
8 impact of the gas pipeline is expected to be minimal
9 provided there's a prohibition on the withdrawal of
10 gravel from the flowing stream beds and an avoidance
11 of critical overwintering areas. The potential impact
12 of the construction of the oil line would be similar,
13 as noted above regarding the Mackenzie corridor and the
14 restraints basically the same, so that the potential
15 impacts of the two would be additive. A road would
16 have much greater impact than either pipeline because
17 of its greater borrow requirements, its greater effect
18 on drainage, and because of the greatly increased
19 access which will be provided.

20 For birds, the potential
21 impact of the gas pipeline would be mainly associated
22 with disturbance and increased access. The area of
23 greatest concern is the snow geese staging which
24 occurs on the North Slope and in portions of the
25 Mackenzie Delta between about August 15th and October
26 1st. Disturbance studies indicate that the birds can
27 tolerate a certain amount of disturbance, specifically
28 three or four flights a week. The oil pipeline would
29 have a similar potential impact during construction and
30 operation but further studies and more precise

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information about the operations of the oil pipeline are required before it can be determined whether the impacts of the two pipelines are likely to be additive or synergistic, and whether the total potential impact of the two lines would be within acceptable limits. It is probable that the increased personnel and aircraft flights resulting from the pipelines would be less than occasioned by the Dew Line sites as described above. Because of the increased access and disturbance, a highway would have a much greater potential impact than either pipeline.

For mammals, the potential impact of a gas pipeline would be associated with increased access and disturbance, with the main concern being the Porcupine caribou herd. The most critical period is from calving in May-June to the dissipation of the post-calving aggregation about August 1st. With mitigative measures, that Arctic Gas has proposed, no serious impact on the caribou is expected. An oil line built with present technology would be partly above-ground and a considerable additional study would be required to determine its best location and the potential impact on what may be a partial barrier to the free movement of the herd. Further studies would be required to determine what the potential impact might be. A highway would have the greatest potential for impact because/the increased access to important caribou areas.

Among the other considerations are the socio-economic ones. There are no settlements

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associated with the coastal route, so the socio-economic impact of the two lines would not be great in this area. The highway would have a substantial socio-economic impact because it would provide access to the area, and easy movement of people between Alaska and Canada. Studies are required to define the nature of this impact.

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Aesthetics: Both pipelines would have pumping stations and the oil line would likely be above ground for part of the alignment. The right-of-way would not require clearing and would not be greatly different from the surrounding area. These impacts would be additive with the oil line in having somewhat more aesthetic impact. A highway would have a much greater impact on the aesthetics of the area than either pipeline.

Archaeology: A gas line will provide extensive baseline information regarding the archaeological resources along the coastal area. An oil line would have a separate right-of-way and would produce additional information. The potential impacts would probably be additive.

We can conclude then that along the Mackenzie Corridor, which has already been established, the installation of gas pipeline will have little incremental impact on the environment, nor will there be a marked impact on the aesthetics or on the archaeological resources of the area. The gas line will not seriously affect the alignment of future facilities, since they have differing requirements in terms of terrain and engineering factors. Installation of any future facilities including an oil line will benefit from the installation of the gas line first because its construction will provide a greater data base and greater field experience, the use of common facilities during construction and operation and maintenance and finally, backup in terms of operating

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procedures.

The Mackenzie Corridor on the east bank of the Mackenzie River will incorporate for all the present and proposed facilities, a strip of land bounded on the west by the river, and generally on the east by the oil pipeline. We believe all these facilities can be constructed in the corridor and we're most confident with respect to the gas line that the environmental impact will be within acceptable limits. Of the proposed facilities, the highway will have the largest potential impact.

Along the Yukon Corridor, the installation of gas pipeline will have little incremental impact on the environment and there'll be minor impact on the aesthetics or on the archaeological resources of the area. The gas line will not seriously affect the alignment of future facilities since there are differing requirements in terms of terrain, engineering factors and so on. As with the Mackenzie Corridor, the future facilities' installation will benefit from the gas line installation for the same reason.

There is presently no proposals for either a highway or for an oil line along the coast, and if either were to be considered, additional study would be required.

MR. STEEVES: Mr. Hemstock is now available for cross-examination and to answer questions that anybody may have arising out of Exhibit 663, 665, 666 and 668.

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In Chief

THE COMMISSIONER: Mr.

Hemstock, after twenty months or whatever it is,
I sometimes have the feeling and I think it's known
as *deja vu*. Did you mention the interior route
here?

WITNESS HEMSTOCK: No, I
didn't.

Q I'm glad of that. I was
afraid I must have overlooked three or four pages.
So, you saved me acute embarrassment. Is there any
reason for your omitting the Yukon route--the interior
route? That is under the guidelines essentially the
same corridor, I suppose. You dealt simply with the
coastal route in this paper?

A Yes, I dealt with the
coastal route, and that was because that was our prime
route. I would have very much the same comment, I
think, with regard to the interior route. I would
note first of all that it doesn't have any of the
background as a corridor or other uses that the coastal
route has.

Q Historical--

A Historical background.
Because it is through mountainous areas, it's more
confined than the coastal route is and the future
lines, such as an oil line or a highway would, therefore,
be in some areas very closely confined to the
alignment of the first pipeline. I would think that
in that case, the pipeline would perhaps have much
more impact on the following facilities because it would

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In Chief

1 be normal, I suppose, to select the best areas, confined
2 area, for the first project which just went in there.

3 But I would think that there
4 would have to be additional studies done with regard
5 to the impacts of an oil pipeline because in many cases
6 it would be above ground. It would be a barrier to
7 free movement and again, the movement of say caribou
8 is more restricted in those areas and the highway would
9 have all the impacts that I mentioned. It would bring
10 in access to areas which are very important to wildlife
11 for perhaps a longer period of time than the coastal
12 route.

13 Q I'm inclined to recollect
14 the evidence of Dr. Weedon who gave evidence at
15 Whitehorse last year and again in the fall. He's
16 a biologist who was an assistant to Governor Hammond,
17 I think. Did he say--maybe you have a recollection of
18 this. Did he say that he felt that to build a gas
19 pipeline along the interior route, at least through
20 the Alaskan segment of the interior route, you'd have
21 to build an all-weather road to do it? I'll have to
22 check that out.

23 A I'm sorry. I can't
24 remember that he did say that, although I know that
25 our plans call for a road along portions of it because
26 we need access from airstrips to compressor stations.
27 I can't recall whether he said it would require a road
28 or what.

29 Q The Alaskan portion of
30 the interior route takes you through the Brooks Range

R. A. Hemstock
In Chief
Cross-Exam by Bayly

1 and that's a range that is something like seven thousand
2 feet or more.

3 A Yes, they're quite
4 rugged mountains.

5 Q Yes.

6 A Rugged topography and
7 we would not be able to build airstrips in a good
8 portion of that mountainous area and would have to
9 provide access to compressor stations year round from
10 sites outside.

11 Q Yes. Right.

12 MR. GOUDGE: Mr. Bayly of the
13 Committee for Original People's Entitlement can lead
14 off the cross-examination.

15 CROSS-EXAMINATION BY MR. BAYLY:

16 Q Mr. Hemstock, when you
17 talk about the corridor in the context of the Mackenzie
18 Valley, I take it that you're talking about something
19 quite different from what Mr. Templeton has been
20 talking about the past couple of days. He's talking
21 about a five mile strip that is in widths varying to a
22 two mile strip to be designated as the energy corridor.
23 You don't mean that, I take it?

R. A. Hemstock
Cross-Exam by Bayly

A I'm talking about a somewhat lighter corridor. I think I defined it as that area between the -- where the proposed oil pipeline might be and the east bank of the Mackenzie River. Some places that would be in the order of perhaps less than 5 miles but in other cases, it's considerably wider than that.

Q And is that because that we can't tell from the information we have that the alignment chosen by either Arctic Gas or Foothills would be suitable for more than one facility in a five varying to a two mile stretch?

A Well we can't be particularly specific about what requirements for an oil pipeline would be, however, if you have read the evidence that was to be presented by the Beaufort Delta, you will see that they have selected a corridor and I've forgotten, I think it's 18 kilometers wide as a study corridor and that they would put the oil pipeline within that corridor. And you will see that --

Q In some places your route is --

A Well most of those were inside and we are outside that closer to the river at two locations north of Fort Good Hope.

Q Now I don't want to discuss their corridor with you, but, you talked about the corridor as being something that we may be depending able to expect on people's plans to find not

R. A. Hemstock
Cross-Exam by Bayly

only an oil pipeline but perhaps a highway, a railway, perhaps hydro transmission lines. Is that correct?

A That's right.

Q And for that reason, as well, the five mile transportation major corridor that Mr. Templeton has spoken of might not be adequate in size to contain all those facilities safely and appropriately?

A It might well be that some of the other facilities having different terrain requirements would be better in a somewhat wider corridor, having a little more flexibility than provided with the 5 miles.

Q And given the evidence extent that we've heard on gravel and to a lesser/ on water sources, we may be in a situation where in some areas, there will be a scarcity and therefore the requirement go a long way to get the required resources for all the possible things that might share the corridor, if the elements in it were too close together.

A I think that that might apply to gravel resources but certainly not the water resources, because I don't see the requirements overlapping and those are renewable resources, but you have -- certainly have a point with regard to gravel supplies if the corridor becomes quite narrow then there'll be conflicting demands on the gravel supplies and while I've indicated in the evidence, I don't

R. A. Hemstock
Cross-Exam by Bayly

think that this would be particularly a problem with two pipelines, neither having particularly great requirements and with the oil pipeline, coming after the gas pipeline and being able to use the facilities many of which require the major amount of gravel like the airstrips and the docks and so on, that there would be an overall saving that way. But with a railway and a highway, that certainly doesn't apply and they would both have very large demands on gravel and I could see them, there being problems in certain areas.

Q Now you have spoken about it being environmentally preferable, I think on the first page of the statement you just read to us, to locate a number of facilities in the same corridor, the third paragraph you state "the corridor concept requires the placement of all transportation and communication facilities in a single corridor to optimize land use and minimize overall environmental impact." Now I don't think there's any question on optimizing land use, that I think we can accept, but, I'm concerned with and I asked this same question of Mr. Templeton, what evidence do we have of the effects on the environment of locating facilities closer together rather than farther apart. Quite apart from the aesthetics, and perhaps quite apart from what you've said about being able to use the same airstrips, haul roads, et cetera, so that we don't have to disturb as many --

A Well that particular

R. A. Hemstock
Cross-Exam by Bayly

1 feature is one that I think is quite important from
2 an environmental standpoint. If we can reduce the
3 number of docks and airstrips and roads, then I
4 think that has a definite advantage, certainly you
5 use less habitat.

6 Q What about river cross-
7 ings? Is there any evidence that it's environmentally
8 more sound to have two or more facilities crossing a
9 river in a five mile strip or stretch of -- of the
10 length of the river than it is to have them more than
11 five miles apart?

12 A I don't know that there's
13 any evidence to that effect. We have been collecting
14 some evidence in observing pipeline crossings in
15 southern B. C., we've not finished the study yet,
16 but it would appear that there is a fairly rapid
17 return to stable conditions after a pipeline crossing
18 is put in. If the following pipeline were not, say
19 installed in the next year, then I wouldn't think
20 that the impacts would be synergistic as Dr. Banfield
21 has commented on in these hearings. I think that
22 they might -- there might simply be another impact
23 similar to the first one a few years later and that
24 the stream and fisheries would stand that kind of
25 an impact.

26 Q Some of it might depend
27 on recovery rates of the various life species systems.

28 A You would hopefully
29 have the right-of-way and the disturbance of the
30 first one fairly well healed up and stabilized before

R. A. Hemstock
Cross-Exam by Bayly

1 you install the second one.

2 Q And if you were looping
3 the gas pipeline at the same time that you might be
4 building -- not you, but somebody else might be
5 building an oil pipeline you might have some diffi-
6 culty with that kind of scheduling then I take it?

7 A Yes, although that
8 situation is one that I would expect not to happen.
9 I think that there wouldn't be two major programs
10 underway at the same time, but, that's a possibility

11 Q Well take another one
12 that may be more likely. Assume that a decision is
13 made to continue building the highway. Highway
14 construction maybe going on at the same time as
15 either pipeline construction or pipeline looping.

16 A Yes, that's a possibility
17 that there'd be a synergistic impact rather than
18 just simply additive.

19 Q I suppose one of the
20 other problems if you were looking for a reason for
21 a decline in say a population of fish. It might
22 be very difficult to say it was one project or the
23 other, or a combination of projects that had added
24 to the effects?

25 A I think that our
26 monitoring program would give you a pretty good
27 indication where the problem lay, although there
28 might be some -- might be an overlapping concern,
29 but the monitoring ought to tell you which areas are
30 being disturbed and to what degree that it's dis-
turbance effects the life in the water.

R.A. Hemstock
Cross-Exam by Bayly

1 Q Now, in the Mackenzie
2 Valley, . . you contemplate the possibility of a
3 corridor having a multiplicity of facilities, and I
4 take it from your evidence on page 2 that you don't
5 contemplate that having the same positive value in
6 a multiplicity of facilities crossing the North Slope
7 of the Yukon.

8 A The Mackenzie corridor
9 I say it's I think No. 6 in line of the utilization
10 of that corridor with transportation facilities. I
11 do not see the same potential or the same probability
12 that there will be other transportation facilities
13 to cross the Northern Yukon.

14 Q Quite apart from the
15 probability, would you recommend that there not be?

16 A I would personally
17 recommend that there not be a highway across there.
18 I would recommend that -- I would have to see a lot
19 more detailed study before an oil line were laid
20 across there.

21 Q And those are in kind
22 anyway the reservations that the consultants in
23 individual areas of biology had on the possibility of
24 an oil pipeline and a gas pipeline crossing the
25 North Slope --

26 A Yes.

27 Q -- and you all gave
28 evidence together.

29 A I think all my advisors
30 have expressed that kind of a concern.

R.A. Hemstock
Cross-Exam by Bayly

Q Now, on pages 2 and 3 you do talk about having facilities within a corridor following routes that are as close together as is consistent with the differing engineering constraints and environmental hazards of the two types of pipelines but not so close together as to bring about undesirable environmental interaction between the two lines. I think the narrow point in the Mackenzie corridor is by previous evidence the Gibson Gap. I'm looking at the Beaufort Delta groups broad corridor, the Gibson Gap is at least included in their corridor as well as being the alignment chosen by Arctic Gas for a gas pipeline. Is there room in that gap for two pipelines to be built side by side, and safely? An oil and a gas pipeline, in your opinion.

A Well, first of all, page 2, that's the government guidelines that I was quoting.

Q Oh, I see. Does that mean your opinion differs from that?

A No, no. No, I think that there is adequate space in the Gibson Gap for both lines but that -- and at the Great Bear crossing is probably where the two lines would be closest together. There's limited areas which appear to be stable along the Great Bear River and probably the two lines would come fairly close together there.

Q And do you see any problems with that crossing having two lines close together?

R.A. Hemstock
Cross-Exam by Bayly

A No, I don't think that there are any problems that are particularly difficult. I mentioned in the evidence here that you would want to be sure that the drainage changes or any problems with stability of one line did not impact on the other pipeline, and it might require some very special techniques to make sure that any side slope area was very well contained or protected. But there is certainly a wealth of experience in Southern Canada having oil lines and gas lines cross each other and so on, so I think they can be constructed fairly close together, providing care is taken.

Q Would you recommend a distance that they should be apart, even at the Gibson Gap and that crossing, a minimum distance they should at least be apart?

A I don't have any recommendations from an environmental standpoint. In my conversations with engineers, as I recall they thought something like 500 feet would be desirable.

Q And that would be as a minimum?

A Yes, that would be a desirable minimum.

Q Now, on pages 6 and 7 you talk about the difficulty in understanding the importance assigned by the pipeline guidelines to the influence of the first trunk pipeline in shaping the transportation corridor, but I take it from your other evidence that you do agree that if you're going

R.A. Hemstock
Cross-Exam by Bayly

1 to efficiently use the airstrips that have been built,
2 haul roads, gravel pits, that the alignment of that
3 first pipeline has some of that importance, whether
4 it is the one that is the least or most likely to
5 cause the various disturbances?

6 A Yes, it has some import-
7 ance because the construction of the gas pipeline will
8 involve construction of some new facilities, and those
9 facilities hopefully would be of use to the following
10 installations. So it has some impact. What I'm trying
11 to get at here is that the pipeline -- the corridor
12 has already been chosen and we're simply following that
13 general corridor.

14 Q No argument there.
15 Further, though, is the Beaufort Delta people have
16 stated in their evidence that they envisage the
17 possibility of using gas to help power their oil lines
18 so where the gas line is maybe fairly important to
19 any plans that they or some other group may come up
20 with in terms of --

21 A That's right. It's
22 desirable to use gas to power the pump units, and the
23 shorter the lines for that fuel supply, the cheaper
24 it will be, and less disturbance, too.

25 Q Even though it may be
26 difficult to see the importance having chosen a
27 corridor, it still may be within that corridor very
28 important that the route alignment of the gas pipeline
29 is one that is complementary to the installation of
30 an oil pipeline within the vicinity, if the oil line

R.A. Hemstock
Cross-Exam by Bayly

1 does depend on gas to a certain extent.

2 A I think it's correct
3 that they should perhaps, as you say, be complementary,
4 that the source of power, though, of gas from the
5 gas line is not the only factor. You have to consider
6 the somewhat differing terrain requirements and the
7 following oil pipeline project design would try and
8 optimize all of these factors -- the terrain require-
9 ments, the river crossings, the supply of fuel, and
10 the use of facilities which are already there.

11 Q If we took the extreme
12 case that Arctic Gas had inadvertently chosen a route
13 alignment that was not at all compatible with the
14 alignment that an oil line could follow, then that
15 oil line might have to be powered by other means. Say
16 for example if it were forced to use the other side
17 of the river, of the Mackenzie River.

18 A Well, it would run on
19 the other side of the river, yes, it would have some
20 other means of power.

21 Q Right, so in that sense
22 it may be of very great importance in that I gather
23 the only other means of power, unless they were lucky
24 enough to find oil that they could use in their
25 pumping stations, the power would be hydro-electric
26 power.

27 A Well, it's probably quite
28 reasonable to assume that some of the oil could be
29 taken from the line and in a very small process made
30 suitable for firing turbines.

R. A. Hemstock
Cross-Exam by Bayly

1 Q That depends though on
2 the oil that is found?

3 A It depends somewhat on
4 the quality of the oil, yes.

5 Q That's what happened,
6 I gather, in the Canol Project that the oil was suitable
7 for powering pumping stations almost as it came out of
8 the ground?

9 A Exactly as it came out
10 of the ground. It was simply taken off the pipeline
11 and put into the diesel.

12 Q That doesn't happen all
13 the time?

14 A No, it doesn't but a
15 turbine is less demanding than a diesel power unit.

16 Q All right. Have you
17 had discussions with the Beaufort Delta Oil Project
18 Limited as to how much gas they would hope to use to
19 power their line? What proportion of the--

20 A No, I haven't had any
21 discussions.

22 THE COMMISSIONER: Excuse me.
23 Are they here?

24 A They will be here and
25 it would be quite a simple matter to work out the
26 amount of gas required to generate the horsepower for
27 whatever size line is required.

28 MR. BAYLY: Well, I'll ask
29 them that and perhaps they'll have an answer to it.
That's all the questions I have. Thank you.

R. A. Hemstock
Cross-Exam by Veale

MR. GOUDGE: Mr. Veale for
the Council of Yukon Indians?

CROSS-EXAMINATION BY MR. VEALE:

Q Mr. Hemstock, in the opening page of your introduction, you've stated that there are three major corridors proposed; the Alyeska Polar Gas and the Mackenzie Valley. I take it that this evidence was drafted prior to the Alcan corridor proposal?

A Yes, that's correct.

O So, you would agree that there is a fourth proposal then?

A That's right.

Q And the fact that there is the Alcan proposal, would you not agree that that does indicate why the first trunk pipeline is considered to have a great influence on a transportation corridor? In other words, if the Alcan corridor is selected, that creates an entirely different situation in the selection of the Mackenzie Valley-Arctic Gas corridor and that the first trunk line then is a major consideration in influencing transportation systems?

A I don't agree that there's this major impact that you're speaking about. The Mackenzie corridor, if you wish, would still be there. It still would be a major transportation artery. It would just not have a gas line in it, if the Alcan line were chosen.

I probably should have mentioned that the Alcan Highway was another corridor

R. A. Hemstock
Cross-Exam by Veale

1 and at the time I wrote this, it simply wasn't being
2 considered as a pipeline corridor. It was a
3 transporation corridor.

4 Q But would you not agree
5 that considering all the advantages that you have
6 outlined in your evidence of having a gas line and
7 an oil line in the same corridor, that if the Alcan
8 route is chosen for the gas line, it is likely that
9 the oil line will follow that corridor as well, for
10 the various advantages that you have indicated just
11 recently?

12 THE COMMISSIONER: It is
13 likely that what?

14 MR. VEALE: The oil line
15 will follow the gas line in the corridor.

16 A Well, I couldn't agree
17 with that because the oil that is projected to move
18 up the Mackenzie is in the Mackenzie Delta and I
19 would not see it likely that it would go across to the
20 Alcan Highway to follow that gas line. It seems to
21 me it would head directly south up the Mackenzie
22 to tie in with other oil lines in Alberta.

23 Q Well, aren't you just
24 closing your eyes to the existence of petroleum
25 reserve number 4 next to Prudhoe Bay? Isn't that the
26 issue?

27 A I believe that any
28 additional oil that is found in Alaska will go out
29 through the Alyeska corridor. I would, at this
30 moment, find it surprising that a new corridor would

R. A. Hemstock
Cross-Exam by Veale

1 be chosen.

2 THE COMMISSIONER: Where is
3 this getting us, Mr. Veale? You're having an
4 interesting argument with Mr. Hemstock on this subject
5 and one upon which all of us have views. The Government
6 of Canada has obviated the necessity for pursuing the
7 matter because they, in the pipeline guidelines,
8 have said that so far as the corridors we're considering
9 are concerned, we're to assume there will be a gas
10 pipeline and then an oil pipeline.

11 Now, you have an interest in
12 this Alcan corridor. The corridor is always one that
13 we have not had referred to us. Suppose Mr. Hemstock
14 were to agree that if you built the gas pipeline along
15 the Alcan route, then oil from petroleum reserve number
16 4 would be delivered to the bed continent along
17 the Alcan route by our new oil pipeline and would not
18 go either along the Mackenzie Valley or to Valdez, and
19 indeed there's every reason to believe the oil that
20 will be loaded at Valdez will not be going to the
21 west coast of the United States anyway for reasons
22 outlined in "Newsweek Magazine" a couple of weeks
23 ago. It's a confidential source of information.

24 MR. VEALE: Well, Mr.
25 Commissioner, I won't pursue that. I just had some
26 difficulty--

27 THE COMMISSIONER: What if
28 he agrees? Where does it get us? Let's suppose Mr.
29 Hemstock says I agree, Mr. Veale. Now, what is that
30 going to tell me?

R. A. Hemstock
Cross-Exam by Veale

MR. VEALE: It was Mr. Hemstock's logic that concerned me, Mr. Commissioner. Getting to the interior route, Mr. Hemstock, do I take it from your comments initially with the Commissioner that it's your view that the interior route is less suitable as an ultimate corridor including other modes of transportation?

A Yes.

Q Thank you. And this
is because the narrowness of the mountainous terrain
principally and also the river valley, I take it,
The Canning River Valley and so on means a bit of
less flexibility in location of lines.

A Yes, that's correct
and then wildlife is there for longer periods of time than along the coastal route.

Q On page 13 of your evidence you indicated that the socio-economic consideration in your view was that the presence of the two facilities provides greater scope for employment. Would you not agree though that if we consider looping of a gas line and then we consider a further construction period for an oil line, that the social impact on populated areas would be greater over the long term?

A Well, you're saying that if a high level of activity is to continue over a longer period of time, there will be a greater social impact and I would agree with that. I wouldn't agree that it necessarily has a negative impact. I think

R. A. Hemstock
Cross-Exam by Veale

1 there's an opportunity for a positive impact if a
2 fairly high level of activity is maintained over a
3 long period of time. Longer period of time than what
4 is described particularly in Alyeska as a boom and
5 bust cycle.

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R.A. Hemstock
Cross-Exam by Veale

1 Q And further on page 17
2 of your evidence you indicated that the socio-economic
3 impact of the oil and gas line along the coastal
4 route would not be great in that area. I take it that
5 you would agree that there is potential there, if
6 the disturbance of the Porcupine caribou herd were
7 to take place as a result of an above-ground line,
8 that that could have a social and economic impact on
9 the Community of Old Crow.

10 A Yes, that's right.
11 If there was an impact on the caribou herd, it would
12 be felt in Old Crow and in other village settlements
13 in Alaska, and to some extent there would be the same
14 sort of a situation with regard to snow geese, which
15 are migratory.

16 Q Mr. Hemstock, in your
17 evidence on the environmental monitoring program on
18 page 2 at the bottom you've indicated that perhaps
19 there could be some co-ordinating body relating to
20 monitoring. Now, does that -- does your idea of a
21 co-ordinating body, does that come into line with some
22 of the evidence we've heard in the last two days
23 relating to single agencies to rationalize the process
24 of inspection and monitoring?

25 A I think perhaps the
26 principle applies, but I wouldn't think that the
27 single agency that I've heard being discussed would
28 be the agency which would be concerned with monitoring.
29 I think, if I recall the evidence correctly, the
30 single agency was to be set up and then dismissed

R.A. Hemstock
Cross-Exam by Veale

1 at the end of construction. Monitoring I would see as
2 an ongoing process and I would think that an organization
3 or an agency like the Canadian Wildlife Service
4 might be in a better position to co-ordinate monitoring
5 efforts, being a continuing department of the government.

6 Q Mr. Hemstock, relating
7 to the area of contingency plans, has Arctic Gas
8 developed a contingency plan if there is a disruption
9 of the Mackenzie Valley barge system and say you're
10 going through the interior route you have to use the
11 Dempster Highway. Has the company formulated contingency
12 plans with respect to impact on caribou migration and
13 the interaction of the highway to caribou?

14 A Again this is not my
15 area of expertise, but as I recall, the Dempster Highway
16 does not provide a contingency plan in the event
17 of difficulty along the Mackenzie River, the barge
18 system. The material which would need to be moved
19 by barge would all be on-site or on its way to Hay
20 River and Axe Point and so on, and by the time any
21 difficulty was apparent on the river I think it
22 would be impossible to return that material and get
23 it up through the highway and on-site to meet the
24 construction requirements. The contingency planning
25 then will be to take what measures you need to take
26 in order to move necessary material down the Mackenzie
27 either using the highway or winter roads or whatever
28 may be required to get it on-site.

29 If it were apparent during
30 more, planning that the Dempster Highway and the access

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Cross-Exam by Veale

1 through say Skagway and Whitehorse were a good way to
2 supply a portion of the pipeline, then that would be
3 planned ahead of time and it wouldn't have the same
4 -- it wouldn't be the same approach as a contingency
5 plan.

6 Q I see. I was referring
7 to a recent report that was presented to the Inquiry
8 by, I think it's called,

9 "Arctic Transport,"
10 and there was a specific section which indicated that
11 the applicants were using the Skagway-Dempster Highway
12 route as a contingency route in the event that there
13 was a disruption of the Mackenzie Valley transportation
14 by whatever mode. Is that not the case?

15 A My understanding is that
16 it's being looked at as an alternative, but it would
17 not be a contingency plan.

18 Q And I take it then that
19 the answer is "No, there are no contingency plans with
20 respect to the caribou on the Dempster Highway.

21 A That's right. That
22 falls out. We have, as you know, though, had
23 recommendations from our advisors in that area that
24 traffic would have to be controlled, that there be some
25 shutdown if caribou migration was in the area and that
26 sort of thing, but we have not taken it further than
27 that.

28 Q Now also in the area of
29 contingency plans, the problem has been posed, I
30 think, throughout the Inquiry that there may be storms

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on the North Coast of the Yukon which force ice in close to shore, thereby preventing barge traffic from off-loading stock and stockpiling. Are there any contingency plans in that regard if the construction scheduling is likely to be thrown off because of such a natural problem?

A Well, as I understand it, the supply of the material requirements for the coastal line come from two sources, the Alaska portion -- I'm not sure just where the break is, coming around Point Barrow -- the Northern Yukon coming down the Mackenzie. Now the contingency plan for the non-arrival of barges around Point Barrow would be the same as used by some operators at Prudhoe Bay last year where the material couldn't get around, was moved back to Southern Alaska and shipped north by the highway. With regard to Northern Yukon, and it's a fairly rare instance, if the ice prevented access along the Yukon, then the material would have to be landed at some suitable site along the Yukon coast if it was available -- that might be Shingle Point or Komakuk -- and transported along the pipeline right-of-way after freezeup.

Q After then the construction of a snow road, I take it.

A That's right, yes.

Q Has Arctic Gas done any contingency planning in the whole area of the suitability of snow roads? In other words, if snow roads for some reason or other are not able to be constructed,

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Cross-Exam by Veale

1 in time and for the length of time required for the
2 one-year winter construction, has there been any
3 contingency planning relating to, you know, borrow
4 pits and so on to actually construct an all-weather
5 road?

6 A No.

7 Q So that's just something
8 that is just out of the realm of possibility, I take
9 it, from the company's point of view.

10 A Yes. The contingency
11 planning there deals with the means and methods of
12 making sure that snow roads are available.

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Cross-Exam by Veale

Q And let's say that snowroads are available, but, they're not available for the time period anticipated. What about the contingency of spending two seasons on the north slope as opposed to one?

A As I recall the engineering people have dealt with that possibility in front of the National Energy Board and they pointed out that the Northern Coastal route is scheduled for the 3rd winter of construction and that there would be two years of experience before that portion of the line was built. They have pointed out that there are several ways that they could increase the capability or the output in that third winter, and as I recall these, they were to provide additional camp space so that there was no shut down in moving of camps from one site to another., provide additional equipment and additional manpower, joining that during the third winter to be sure that the job could be completed as in the time frame. Now there's been no planning that I'm aware of of extending that third construction into a fourth winter of construction. The contingency planning is towards taking care of the eventualities and being sure it's done in the third year.

Q Back to the idea of a road which the company does not want to build. If it were necessary, has the company determined that there is enough borrow there to construct it?

A We have not looked at

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that, no.

Q And from what you've said relating to, if the problem of completing that one year construction -- the answer or the response of the company is not a contingency plan for other seasons, but simply to bring more men and resources into that particular segment of the route in that one winter season?

A Yes sir.

Q There's also at this Inquiry, been a great deal of discussion relating to the problems of natural waterflows and the berm disrupting these waterflows and so on, and the possibility of the snow-road melting and causing ponding and so on and I understand that there has been suggestions of having culverts constructed underneath the pipeline itself to ensure that the waterflow would pass through if that was the natural direction. I take it you're familiar with this?

A Yes.

Q Has the company developed any contingency plans relating to what would happen if -- if these culverts underneath were in fact to freeze. Is there any -- is there any further area or thinking that the company has done in this respect?

A I'm not aware of anything other than the theoretical studies of heat flow and the like which lead our engineers to believe that the culverts can be designed so that they will

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Cross-Exam by Veale

remain open and this is a matter of really of the theory of the amount of heat in the water and the flow requirements and so on. I don't think there are any other plans that -- certainly not that I'm aware of.

THE COMMISSIONER: Excuse me Mr. Hemstock, it's 3:30, I think we could stop now for a cup of tea.

MR. GOUDGE: Can I ask sir, that we be expeditious for this reason that the Beaufort, Delta people are here and I promised them that they could get out this evening.

MR. VEALE: You shouldn't make promises like that Mr. Goudge.

MR. HEMSTOCK: If would be convenient, I could step down and have the Beaufort, Delta go on and come back to me later.

MR. GOUDGE: Let's talk about that at coffee.

(PROCEEDINGS ADJOURNED FOR A FEW MINUTFS)

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Cross-Exam by Veale

1 (PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

2 MR. GOUDGE: We're prepared to
3 resume, sir. Mr. Veale is about to conclude his
4 cross-examination.

5 MR. VEALE: Q Mr. Hemstock,
6 returning to the construction period of one year on the
7 North Slope, has the company ever entertained a
8 contingency plan that would not involve placing more
9 men and resources in the one winter period, but rather
10 commencing that construction period one year earlier
11 so that if there were ultimate problems with snow
12 roads they would have a two-year period to do that
13 construction?

14 A Sir, I can't be sure
15 whether they have or not, but I suggest that the
16 Arctic construction panel, which I believe will be
17 here tomorrow, includes both Mr. Dau and Mr. Daniels,
18 and they could respond to that question.

Q Do you have any concerns,
being aware of the fact that they may put more men
and resources onto the North Slope in the one winter
construction year, do you have any concerns about the
ability of the snow road to sustain the obvious level
of use that it would receive?

A No, because the number
of passes over any piece of snow road is fixed, it's
simply a matter of having more places where activity
is undertaken. So I would not see any great
difficulty with the added impact in the winter.
Pardon me, with an added effort in the winter.

R.A. Hemstock
Cross-Exam by Veale

Q On your report entitled:

"Arctic Oil Spill and Toxic Material Contingency Plan,"

in the preface on page 1 you've indicated that formal discussions have not been held with various co-operative oil spill contingency groups. What groups are you referring to in that paragraph?

A Is this page 1?

Q No, your preface, Mr. Hemstock.

A Well, the groups that I would refer to would be DEPU, the Delta Environmental Protection Unit, the Ministry of Transport, and the Department of Environment, all of whom have responsibility or facilities in place for contingency planning. We have had informal talks with, for instance, the producers with regard to their plans which they have in force right now.

Q But I take it you're going to enter into formal arrangements with these contingency groups prior to construction.

A That's right.

Q And with respect to part E on the same page, the technology of spill counter-measures, do you have some information to indicate that there's going to be some improvement in counter-measures and techniques and facilities?

A No, I don't have anything specific except to note that there has been a good deal of work and research in this area in the last

R.A. Hemstock
Cross-Exam by Veale

1 oh, say five years, and that that has resulted in
2 considerable improvement and better knowledge about
3 contingency planning, and that's a continuing thing
4 that I anticipate.

5 Q So it's not actually
6 the actual equipment that you're concerned about,
7 it's the methods being -- the method planning of
8 doing it?

9 A And equipment too.

10 There's improvement in equipment.

11 Q There are improvements
12 in equipment that have taken place in the last year
13 or so?

14 A Yes.

15 Q Specifically what would
16 they be?

17 A Well, better capability
18 with such devices as oil pickups, I think they're
19 called "slick-lickers" that go around and pick up
20 oil on water. Perhaps another aspect in the other
21 way is a better understanding of the effect of deter-
22 gents and coagulants or depressants, chemicals, and
23 the fact that why they may be effective in getting
24 rid of the oil, and that's not necessarily an environ-
25 mentally desirable way to do it. A better understand-
26 ing of absorbants and better absorbant materials to
27 pick up oil. Those are the kind of things I'm thinking
28 about.

29 Q But with respect to the
30 formalizing of discussions and actually ordering

R.A. Hemstock
Cross-Exam by Veale

1 equipment and so on, cleanup equipment, when is that
2 going to take place? Is this something that will take
3 place immediately after approval?

4 A I would think that we
5 would start with that immediately after approval and
6 certainly we would have to have some equipment in
7 place before the start of any field activities.

8 Q Do you have any con-
9 tingency plans relating to the difficulties you might
10 have in the quality of monitoring and inspection when
11 say your aircraft are respecting certain height
12 limitations imposed on it? In other words, are
13 you concerned that your monitoring and inspection
14 may deteriorate and you can't get close enough to
15 the pipeline to do the monitoring, you know, necessary
16 to determine cracks and so on?

17 A I think there's a con-
18 fusion there. The monitoring that I'm referring to
19 is a monitoring of environmental factors. Some of
20 it might be done from aircraft; much of it would be
21 done on the ground inspection. I think you're
22 referring to pipeline inspection, that is a routine
23 inspection of the pipeline right-of-way. We would
24 expect that that inspection would have to be done
25 certainly in some cases at lower altitudes than
26 our present aircraft guidelines specify and we would
27 want to schedule those flights when there would be
28 a minimum disruption as a result of the lower
29 altitude. I should point out that as I understand it,
they would require no more than one to two flights

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Cross-Exam by Veale

a month, and we wouldn't see any great difficulty in that sort of requirement. Monitoring of snow geese, the monitoring of caribou, that sort of thing from aircraft, you have flexibility according to the timing of the flights which you don't necessarily have to fly on a certain date.

Q Am I right in understanding that the company at this point intends to have its own inspectors during the construction period? Is that the intent?

A Yes, that's the intent.

Q And if it were to come to pass that there were to be a third party or a single agency as we've discussed in the last day or so, does that present any management problems to the company to meld in with that sort of authority as opposed to doing your own inspection entirely?

A No, I don't see any difficulty. Our own inspection has to be done, in any event, and that would simply facilitate our co-operation and co-ordination with the government agency or regulatory agency.

R. A. Hemstock
Cross-Exam by Hollingworth

MR. VEALE: No further
questions.

MR. GOUDGE: Mr. Hollingworth
for Foothills Pipeline?

CROSS-EXAMINATION BY MR. HOLLINGWORTH:

Q Mr. Hemstock, we could
discuss your monitoring program for a moment. When
you refer to programs which have been conducted since
1971, which programs are you referring to?

A Where is the reference
to that, sir?

Q There's a statement
about half the way down saying,

"Many of the environmental studies that have
been carried out by Arctic Gas in '71 will be
continued as part of the monitoring program".

A Those would refer to
the monitoring and the research studies of the caribou,
the research studies on snow geese, two that come to
mind in particular.

Q Which you mentioned there
as well as Chick Lake, would that be an exhaustive
list or are there a lot more?

A Yes, there are a lot more
studies which have started out as perhaps data gathering
studies, for example, in streams and where a return
to the same site year after year provides a monitoring
or a chance to check on the changes which have occurred.
These would include streams along the north coast and
a few streams which feed into the Mackenzie River.

R. A. Hemstock
Cross-Exam by Hollingworth

Those are other types of monitoring. There's also the monitoring of vegetation test sites, which were established as many as five years ago and which have been observed each year since.

Q Have you developed your program enough to know how much data you would be looking for from say a particular stream and with what frequency you'd go there?

A No, I think that I would have to rely on the people like Dr. McCart for that. I think it would vary from location to location and it could well be that in some streams, for instance, a rather cursory examination would be all that was required to show that there was no following impact. In other cases, if there was obviously something wrong, there was siltation or something like that, it might take a rather extensive study to determine the amount of impact.

Q What's the overall objective of the monitoring program?

A I think the basic objective is to determine the impact that has occurred as a result of the construction and operation of the pipeline and, of course, it follows then that if that is done correctly, that any additional construction can be done in a better fashion or that changes in operating technique can be initiated which would improve the environmental situation.

Q There's not really too much you can do with the plants you have in place? It

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Cross-Exam by Hollingworth

1 applies to future installations more than anything,
2 doesn't it?

3 A It applies to the
4 installation of the gas pipeline.

5 Q Well, let's suppose
6 you have your system in place and you have a compressor
7 station at a certain place, for instance, near Tununuk
8 Junction and suppose it turns out to bother a good
9 many birds, much more than you had anticipated, there's
10 really nothing much you can do about that, is there?

11 A In that particular
12 instance, presumably the disturbance would be due to
13 noise and there are methods of cutting down on noise
14 emissions if that work turned out to be necessary.
15 If they were some other factors that could not be
16 mitigated, then obviously that would be a disturbance
17 that we had not expected.

18 Q The source of information
19 that will be useful for a further pipeline or perhaps
20 for looping or something like that?

21 A It could be useful for
22 additional pipelines or for looping.

23 Q Well, now in your
24 corridor evidence, you outlined some good reasons why
25 the Mackenzie corridor should be followed and to a
26 lesser extent, these considerations applied to the
27 Yukon corridor. One of them was that it was a natural
28 corridor to follow and that further installations would
29 follow that course and that previous installations
30 had followed that course.

R. A. Hemstock
Cross-Exam by Hollingworth

1 The same can't be said at all
2 for the cross-delta route, can it?

3 A I would think so.

4 Q Can you elaborate on
5 that response?

6 A Well, I think that the
7 factors which have been considered in the cross-delta
8 route are the same kinds of factors that are considered
9 in the route across the northern part of the Yukon.
10 That is, the type of terrain, the disturbance to
11 various forms of wildlife, the area across the delta
12 has been used to some extent certainly for transportation
13 by barge within the delta. It is also used as a
14 transportation route east-west by native people. I
15 don't see it as any difference in principles to the
16 considerations of a corridor along the northern
17 Yukon.

18 Q Because the route across
19 the northern Yukon isn't really following any major
20 transportation installation other than a few airstrips
21 for the DEW line.

22 A The airstrips for the
23 DEW line and the fact that there has been shipping
24 along the coast and it is a natural transportation
25 route for northern people and has been for years, but
26 the utilization has been rather small.

27 Q Yes, but as an
28 environmentalist, sir, surely the transportation by
29 barge that has gone on along the coast has little if
30 no bearing upon what happens to the environment on the

R. A. Hemstock
Cross-Exam by Hollingworth

1 coast itself and I'm thinking of the caribou herds or
2 the nesting birds.

3 A It would probably have
4 little or no impact on the caribou. It may well have
5 impact on some of the water birds that frequent the
6 lagoons and spits. The fact that shipping has been
7 moving back and forth across there though is a fact
8 that it should be considered when looking at the
9 transportation of the pipe and material into the various
1 staging areas which we would require.

11 Q But as to history of use |
12 for transportation, there's no question that the
13 Mackenzie Valley has been used to a far greater extent
14 than the Yukon coast?

15 A That's right.

16 Q And you're really
17 suggesting that any further use of the Yukon coast
18 stop after your gas line gets in?

19 A I'm suggesting that
20 any further use of the Yukon coast for an oil line
21 or for a highway. For the oil line, certainly
22 additional studies would be required. For a highway,
23 my personal opinion is that at least in present day
24 that a highway should not be considered across there.
25
26

R. A. Hemstock
Cross-Exam by Hollingworth

Q Okay, but as far as following the Mackenzie corridor you point to the existing transportation facilities, they're already including a partly completed road, bargeing -- extensive barge traffic, extensive air traffic, telecommunication facilities and say that that would be a logical corridor to follow for a gas pipeline.

A Yes.

Q And for an oil pipeline, it would be all the more logical because the gasoline would already be in place.

A I think that would be an important factor for the oil pipeline.

Q And I take it the converse would be true, that if an oil pipeline were in place, then it would be very logical for a gas pipeline to follow it? Because it could use the same facilities, the wharves as you pointed out, and the same airstrips?

A I think that the reverse would be generally true, yes.

Q Then wouldn't the reverse apply over in Alaska, where an oil line is three quarters of the way in place? Shouldn't the gas line follow it rather than break new grounds, following that theory?

A It's a matter of distance and one of the factors which have to be considered. It's a matter of cost. Another factor which I have not studied but which has to be looked

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Cross-Exam by Hollingworth

at, would be the -- whatever problems there might be in going through the rather narrow mountainous area.

Q Just pursuing the concepts that you've outlined in your paper Mr. Hemstock, isn't it far more logical for a gas line to follow an existing oil line in Alaska? Putting aside the cost considerations and the other ones you've raised in your answer just now?

A Now I think there are several other factors which you have to look at, but certainly the fact that there is a corridor through the State of Alaska is one of the factors that has to be looked at.

MR. HOLLINGWORTH: Okay, thanks, I have no further questions.

MR. STEEVES: Can I re-examine on that last question?

MR. GOUDGE: Perhaps I could ask just one question and then give Mr. Steeves full scope of cross-examination or re-examination.

Q Mr. Templeton, let me ask you if you have any comment on --

A Mr. Templeton is down there.

Q I get you and Mr. Templeton confused constantly Mr. Hemstock. Do you have any comment on what he said yesterday, which is that the Beaufort Basin Gas might be more likely to brought ashore to the Taglu Plant than to the

R. A. Hemstock
Cross-Exam by Hollingworth

1 coast west of the Delta?

2 A Well the Commissioner
3 asked, I did take a look at the evidence that Mr.
4 Templeton submitted and I think that in the Delta
5 area, one might agree with him, that it -- that any
6 offshore oil might be brought in or gas might be
7 brought in to the Taglu area although I think that
8 each case would have to be examined on its own
9 merits. The outer part of the Delta is heavily
10 utilized by birds and I think that you'd have to
11 be certainly aware of those concerns. Normally any
12 offshore oil or gas would be taken ashore in the
13 most direct way possible and I think I would have
14 a preference to head for the mainland rather than
15 through the shallows of the Delta, but I think those
16 would have to be examined individually.

17 And I might comment that
18 I did -- he mentioned yesterday I think that there
19 was no advancing of our argument, that the Coastal
20 Poute was preferable because it was more proximate
21 to potential reserves. We did advance that argument
22 at the hearings in Whitehorse and their in Volume
23 51, page 6782 and we still believe that that's the
24 most persuasive of all of the arguments for the
25 Coastal Route. Now in Mr. Templeton's evidence,
26 it wasn't clear to me whether he had considered
27 the offshore and Coastal potential in Alaska and we
28 did consider that and I think that that's important,
29 and as I recall the potential offshore area was
30 something in the order of 20,000 square miles in

R. A. Hemstock
Cross-Exam by Mr. Goudge

Alaska and the onshore potential was something like a 100,000 square miles and it would seem to me logical, that any reserves on the Coastal Plain or offshore would go much more easily into a Coastal route than they would into an interior route in Alaska, but that that factor should be considered as well as the area and the details which Mr. Templeton talked about yesterday.

THE COMMISSIONER: What was that reference Mr. Hemstock. I remember the discussion in Whitehorse but --

A I had Volume 51, page 6782 and there was considerable discussion from then on during -- regarding the offshore potential.

MR. GOUDGE: Thank you sir.

THE COMMISSIONER: Yes, re-examination Mr. Steeves.

MR. STEEVES: I have none.

THE COMMISSIONER: Well thank you Mr. Hemstock and in the event that this is your last appearance as a witness, I can express my gratitude to you for the co-operation you've given us and the help you've offered us on each and every occasion that you've appeared. We're all very grateful to you.

(WITNESS ASIDE)

MR. GOUDGE: We have next the evidence of the Beaufort Delta Oil Project Limited, Mr. Colin Campbell acts for them and will

1 be presenting their evidence. It consists of Mr.
2 Wylie and Mr. Lipsett. So perhaps I could ask
3 Mr. Campbell to come forward and the witnesses too.

4 THE COMMISSIONER: We'll
5 take sixty seconds off to stretch our legs.

6 (QUALIFICATIONS & EVIDENCE OF T. BUTTERS MARKED
7 EXHIBIT 838)

8 (EVIDENCE OF R.A. HEMSTOCK MARKED EXHIBIT 839)

9 (PROCEEDINGS ADJOURNED FOR A FEW MINUTES)

Lipsett, Wylie
In Chief

(PROCEEDINGS RESUMED PURSUANT TO ADJOURNMENT)

HARVEY D. WYLIE,

DIRECT EXAM BY MR. CAMPBELL: G. B. LIPSETT, sworn:

MR. CAMPBELL: Mr. Commissioner,

as you may be aware, over six months ago I forwarded on behalf of Beaufort Delta the evidence in chief to be given by the witnesses today. As I think you are aware, there have been some rather recent, rather dramatic changes with respect to the ongoing nature of Beaufort Delta and with those thoughts in mind, what I would propose to do is lead the witnesses through their direct evidence but bear in mind there is of necessity going to be some modifications as some of the statements were made over six months ago.

So, with your permission, I would proceed in that fashion.

THE COMMISSIONER: Fine.

MR. CAMPBELL: Mr. Commissioner,

Beaufort Delta Oil Project Limited was incorporated in 1974 for the purpose of planning, designing and doing all preliminary work necessary for applications to construct and operate an oil pipeline from the Beaufort Sea-Mackenzie Delta area to connecting carriers in southern Canada.

However, a decision was made last week by the participants of that project that Beaufort Delta will be phased out of operation by year end. The company appears at this Inquiry at the invitation of Board Council to assist you in endeavors with regard to Section 312 of the 1972 Pipeline

Lipsett, Wylie
In Chief

1 Guidelines. The work of Beaufort Delta has been, at
2 all times, in early stages and the company has not
3 examined in detail many of the issues which it feels
4 would be essential to be examined before an application
5 for a permit to construct could be made.

6 We should also note that there
7 is a pre-condition placed upon the management of
8 Beaufort Delta for the construction on any oil
9 pipeline, namely that sufficient reserves of oil be
10 discovered in the Beaufort Delta area. This condition
11 has not been met and it appears that the area is much
12 more gas prone and hence, the decision has been made
13 to phase out the work of Beaufort Delta.

14 Now, with these parameters,
15 Beaufort Delta is pleased to assist in any way possible
16 and the evidence will be given by members of the senior
17 management of the project.

18 Mr. Wylie, would you please
19 describe your position with Beaufort Delta and outline
20 your professional and business experience leading to
21 your present position?

22 WITNESS WYLIE: My position
23 with Beaufort Delta is that of President. My
24 experience leading into my relationship with Beaufort
25 Delta was a graduate engineer from Montana State
26 College in 1956. Four years with Brown & Root as a
27 design engineer. Five years with the Alberta Gas
28 Trunk Line Company Limited in various capacities of
29 engineering. Six years as president with Pipeline
30 Technologists Canada Limited, a consulting engineering

Lipsett, Wylie
In Chief

1 firm. The past five years prior to joining Beaufort
2 Delta as president of Pipeline Technologists
3 Incorporated, Houston, Texas, an international
4 consulting firm with over three hundred employees.
5 For the past year and a half, almost two years,
6 president of Beaufort Delta.

7 Q Mr. Lipsett, would you
8 outline your professional and business qualifications
9 and the work that you have done with Beaufort Delta.

10 WITNESS LIPSETT: At present,
11 I am acting as director of engineering for the Beaufort
12 Delta group. I'm a graduate in civil engineering from
13 the University of Saskatchewan. After graduation I
14 spent eight years with a small pipeline group in
15 western Canada called Trans-Prairie Pipelines Limited
16 as field engineer and ultimately as chief engineer.
17 I left them and joined Pipeline Technologists. I
18 spent ten years with them in various capacities starting
19 as a project manager in Alberta; subsequently became
20 vice-president of the Canadian company; worked in
21 other areas of the world including Australia and Alaska;
22 became a senior vice-president of the U. S. parent
23 company, at which time I was in charge of special
24 projects which included Arctic and offshore pipelines.
25 For the past year and a half I have been director of
engineering at Beaufort Delta.

26 Q Mr. Wylie, I believe you
27 have an overview of Beaufort Delta which may have
28 changed since the direct evidence was prepared but
29 in any event, would you go ahead with that insofar as

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you're able to.

WITNESS WYLIE: Well, certainly conditions have changed since the direct evidence was filed with this Commission. However, we will go through the filed evidence and as I approach or cover those areas where the changes are, we'll indicate such changes.

Beaufort Delta was formed to study problems of constructing and operate a pipeline system to transport oil from the Beaufort Sea and Mackenzie Delta area to existing oil transportation systems in southern Canada and to carry out all necessary planning, design and preliminary work relating to the project. It will also--it would also have prepared materials required for applications to appropriate regulatory agencies if warranted.

In December, 1974, the five companies signed a participation agreement to initiate the project. Three of the participants are oil companies that have been exploring there since the early 1960's; Imperial Oil Limited, Shell Canada Limited, and Gulf Oil Canada Limited. The others are major oil pipeline companies; Interprovincial Pipe Line Limited and Trans Mountain Pipe Line Company Limited.

With headquarters in Calgary, the company has recently completed its staffing and is now in the process of unstaffing, destaffing and is in the early stages of its work program, which will not progress any further at this time.

While the success of the

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drilling programs will be the deciding factor and quite obviously with the news release and the statements made by counsel in front of this Commission, they are certainly the decided factor; the company had hoped to put itself in a position to make application sometime in 1979. Obviously this will be delayed until some time in the future.

It is anticipated the construction of any pipeline for the movement of crude oil on the Mackenzie Valley corridor will be preceded by a pipeline carrying natural gas from Alaska and the delta, for which the applications have been filed and regulatory hearings are underway.

The need to supplement existing sources of domestic crude oil may be seen in the National Energy Board's reports on the supply and demands for crude oil in Canada, the most recent of which was issued last September.

It might be interesting to note that there is another hearing scheduled for October of this year.

Some statistics as far as crude oil consumption is concerned, in 1974 Canadians consumed about 1.7 million barrels of oil per day. The National Energy Board estimates that domestic consumption will increase between 3.5 and 4.5 percent per year from now until 1985, depending on response to higher product prices and conservation.

This would put Canada's needs in 1985 in a range between 2.4 million and 2.7 million

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1 barrels a day. Conventional oil from the western
2 provinces is supplying those parts of Canada west of
3 the Ottawa Valley and the pipeline has been built and
4 line fill of that pipeline has been completed and
5 crude is going into the Montreal area as of this
6 date.

7 By the early 1980's, production
8 from present sources will not be sufficient to supply
9 these domestic areas. Canada will become increasingly
10 dependent upon foreign sources of oil unless new
11 domestic reserves are found, developed and transported
12 to Canadian consumers.

13 Unlike many countries, Canada
14 has a significant oil reserve potential, but it is
15 difficult and increasingly expensive to find and
16 develop. Some oil has been discovered in the Beaufort
17 Sea and Mackenzie Delta area, and exploration is
18 continuing. The initiation of the project is therefore
19 a first step that could lead to tying these and future
20 finds into existing crude transportation systems.

21 The value of getting
22 preliminary studies for an oil line under way now is
23 to avoid unnecessary delays after it has been
24 established that enough reserves exist to support
25 the proposed lines.

26 Beaufort Delta is not the
27 first group to engage in planning for a crude oil line
28 along the Mackenzie Valley corridor. The discovery of
29 huge oil reserves in Alaska in 1968 at Prudhoe Bay,
30 four hundred miles west of the Mackenzie Delta, led to

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the formation the following year of Mackenzie Valley
Pipeline Research Limited.

Participants were sixteen
oil and pipeline companies including all five Beaufort
Delta participants. The earlier group established
that an oil pipeline from Prudhoe Bay to Edmonton was
technically an economically feasible. However, when
the U. S. decided to bring out Prudhoe Bay oil by route
across Alaska, the Alyeska system, the work of the
Mackenzie Valley Pipeline Research Limited was completed.

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Q Mr. Lipsett, I understand there are certain differences between an oil and gas pipeline. Can you outline what these differences are?

WITNESS LIPSETT: There are a number of differences between oil and gas pipelines but the differences which are of concern for northern permafrost regions are those which result from the operating temperatures of the two types of systems. Large diameter pipelines, either oil or gas, tend to be heat generators. In the case of a gas line, it is possible to refrigerate or cool the gas to obtain the most desirable operating temperature at little or no penalty. This is not the case with an oil line. Since the oil line that we are considering will likely operate at temperatures somewhat above the freezing point, it will be necessary in some areas to elevate the line to provide a positive separation between the warm pipeline and certain sensitive permafrost soils. This is the major difference between oil and gas lines which are of concern for northern regions.

Q Mr. Wylie, how did Beaufort-Delta structure itself to perform the work it undertook?

WITNESS WYLIE: Beaufort-Delta established itself to build on work which had already been done through available information from such sources as the Mackenzie Valley Research Limited, Alyeska Pipeline Service Company, Canadian Arctic Gas Pipeline Limited, exploration and production activities, government studies,

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etc. We planned to utilize environmental, geotechnical, hydrological, pipeline and socio-economic experts to assist in reviewing the work. With the assistance of these and other experts, additional studies as required would have been undertaken to ensure that proper consideration of all related aspects specific to this project were incorporated.

Construction input will be obtained at every phase, or would have been obtained at every phase of the work to ensure environmental integrity, cost effectiveness and feasibility of the final design, as well as availability of goods and services on a timely basis. Beaufort-Delta intended that preference be given to Canadian goods and services. Prior to and during construction, Beaufort-Delta would have made maximum use of the facilities of existing Arctic installations and infrastructure such as transportation, communication and logistics.

Q In terms of present-time frame, what are the parameters that would determine the route of an oil pipeline?

A While the general method of locating the pipeline will be outlined later, the actual routing will be influenced by the following major factors:

1. Location of reserves
2. Location of connecting carriers
3. Government of Canada guidelines
4. Findings of the Berger hearings
5. Type of soil and terrain.

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- 1 6. Rivers and water crossings
- 2 7. Logistics of movement of supplies, equipment and
- 3 people.
- 4 8. Animal migration routes, and habitats
- 5 9. Environment
- 6 10. Economics
- 7 11. Ability to build, operate and maintain a sound
- 8 and efficient pipeline.

9 Q Mr. Lipsett, I under-
10 stand that Beaufort-Delta had in recent months done
11 some work on a preliminary basis for the selection of
12 a pipeline route. Can you tell us, please, how your
13 company proceeded to carry out that study?

14 WITNESS LIPSETT: The route
15 selection was organized following a multidisciplinary
16 approach as indeed it was for all of our project
17 major tasks. These major tasks, if I may, represent
18 the logical steps which must be completed to support
19 the application which we had anticipated. Our first
20 task was to select from a number of potential routings
21 between the oil reserves and a southern terminus, a
22 route study area approximately 28 kilometers in width
23 in which it was agreed that the pipeline could be built
24 with minimum impact. Specific guidelines were
25 agreed upon by all disciplines to ensure consideration
26 of a number of socio-economic environmental and cost
27 factors. These guidelines are attached as Appendix 1
28 to the direct evidence. To arrive at this selected
29 route study area, consultants expert in environmental
30 geotechnical, land use, pipeline design and construction,

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and river hydrology, considered and recommended independently their preferred route study areas based on specific guidelines agreed upon by disciplines. The individual consultant recommendations were reviewed by the entire Task Force and after an extensive process of analysis, reached a consensus of a route area which was basically acceptable to all consultants.

The maps attached as Appendix 2 delineate the route study area and any questions, specific questions we can deal with as we go along.

Q Mr. Wylie, maybe you could just outline, please, some of the other studies that had been undertaken by Beaufort-Delta and those that it planned to do in the future.

WITNESS WYLIE: Well, Beaufort-Delta at the time that the direct evidence was submitted to this Commission was also in the process of establishing a budget for the remainder of this year. The budget for Beaufort-Delta was at that particular time reduced significantly, which had a direct impact on the work that could be performed by Beaufort-Delta from the middle of March onward for the remainder of 1976. However, Beaufort-Delta had performed preliminary systems studies covering pipeline sizes of 24-inches through 48-inches in diameter. With the limited information that we had, we selected a 36-inch diameter pipeline to study further. This size appeared to allow us the greatest flexibility for the ranges of throughput that may have been produced from the source area. Using this pipeline diameter and within the pipeline

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route which would have been selected in the future, we would have developed the pipeline design criteria by which we would have identified both above and below ground construction modes, support configurations, and select winter and summer construction sections. Of major importance in our planning will be the recommendation adopted by the government as a result of the work of this Commission. Our staff had studied and was examining all data available from the Mackenzie Valley Research Pipeline Limited, the Canadian Arctic Gas Pipeline Limited, and government studies, and when completed would have ascertained what additional studies would have been necessary to determine the impact of an oil pipeline throughout this area.

Much of this work would have been ongoing in nature during the period of gas pipeline construction and by the time that that line had been completed we would have a great deal more useful information.

Q Mr. Wylie, based on your present knowledge, do you anticipate that an oil pipeline would be compatible with a gas line within the Mackenzie Valley corridor?

A Yes, I do.

MR. CAMPBELL: Mr. Commissioner, that completes the evidence in chief of the witnesses.

MR. GOUDGE: Sir, Mr. Bayly, of The Committee For Original Peoples Entitlement, will lead off the cross-examination.

Lipsett, Wylie
Cross-Exam by Bayly

1 MR. BAYLY: I don't have
2 very many questions.

3 CROSS-EXAMINATION BY MR. BAYLY:

4 Q Perhaps you can tell me
5 in relation to page 3 and the answer to the last
6 question on that page, you have said that in some
7 areas it will be necessary to elevate an oil pipeline
8 if it follows the -- an alignment somewhere in the
9 corridors, in the corridor that you have attached on
10 the maps. Can you give me an idea either of the
11 percentage or of the types of terrain in which the
12 pipeline would have to be elevated?

Lipsett, Wylie
Cross-Exam by Bayly

1 WITNESS LIPSETT: I can't
2 give you a percentage right now. We've been dealing
3 with percentages that change almost daily since we
4 issued this document, and that's because we have been
5 in the process of analyzing the terrain. Our consul-
6 tants have been identifying the land forms as to
7 aerial extent and type, taking the information that's
8 available from locals in the area to determine what
9 the possibility or the likelihood and extent of
10 settlement might be for a land form in a given region,
11 and we have in fact divided the pipeline corridors
12 as you see it here into six separate regions for
13 geotechnical analysis, and I can tell you this much
14 that in the first area we looked at, which was roughly
15 from Parsons Lake to Campbell Lake, we had a --

16 Q Could you pull the
17 microphone a little closer, because I'm having a
18 little trouble hearing you?

19 A -- in the area from
20 Parsons Lake to Campbell Lake, which was our first
21 geotechnical region, for examination we had originally
22 concluded that it might be possible to bury as much as
23 20 or 25%. We now conclude it would be unlikely that
24 we would bury any of the pipeline through that region
25 except in isolated instances where we could take
26 advantage of soil conditions for animal passage and
27 they would be of short length.

28 Q And those kinds of
29 soil, I take it, would be ones that are well-drained
30 coarse-grained material.

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Cross-Exam by Bayly

A That is correct.

Q So --

A There are a few areas in
there that have ground moraines that have those
characteristics.

Q -- with those exceptions
and perhaps farther up the valley you'd be looking
at the same kinds of soil before you could bury the
pipeline. Wherever there was fine-grain, ice-rich
soil, the pipeline would have to be elevated.

A That's right. The prob-
lem, as you well know, would be excess ice.
However, the problem does become a little more manage-
able as you proceed south down the valley, and as a
matter of fact, we are seeing now that the possibility
of burial increases quite dramatically once we get
south of Thunder River.

Q And when you're going
through intermittent areas of permafrost can you
give me an idea of how small an area it is worth burying
the pipeline in, how small a piece of the pipeline
length?

A Part of the study that
we are conducting right now includes construction cost
estimates which are considering that very problem,
and I don't have that answer for you at this time.
I suspect that we would be looking at fairly long
distances to be economical to bury.

Q Can you bracket it? Is
that, in miles or in tenths of miles?

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Cross-Exam by Bayly

A No, in hundreds of feet.

Q In hundreds of feet.

Now, one of the differences, I take it, between an oil and a gas line, quite apart from the fact that the oil will be at temperatures above the freezing point of water, is that except in extraordinary circumstances where the oil is of such a quality and consistency that it can be used directly in powering the pumping stations, an alternate source of energy must be used in order to push the oil along the pipeline. Is that correct?

A That's correct.

Q And in that you have several options. You can either refine some of the oil before putting the bulk of it into the pipeline and use that, you can use gas if you're close to a gas pipeline, or you can use hydro-electric power.

Is that correct?

A Those are possibilities, yes.

Q Are there other possibilities that I've left out?

A The only one that comes to mind would be electric power generated from thermal installation and powered by coal.

Q Now, of these power sources and in the corridor that you've outlined on the maps, what sources of power have you considered at this stage?

A Our basic assumption has

Lipsett, Wylie
Cross-Exam by Bayly

1 been that our stations will be gas-powered.

2 Q And I asked this question
3 of Mr. Hemstock earlier, and he referred me to you.
4 What quantities of fuel, given the -- and I guess we
5 don't really even have a size for the pipeline.
6 Let's take a size for a pipeline of 42 inches, what
7 quantity of oil -- sorry, of natural gas would be
8 required to pump the oil through the pipeline?

9 A I don't have those
10 figures with me. We have a range of numbers which re-
11 flect the various buildup rates of crude throughputs
12 through pipeline, and the figures don't readily come
13 to mind. If they're required, we could perhaps
14 produce them at a later date.

15 Q If that is the major
16 source of fuel that you would contemplate using to
17 power your pumping station, then the alignment of the
18 gas pipeline is something that you want to follow as
19 closely as you can, given the geotechnical consider-
20 ations that are different.

21 A Given geotechnical
22 and hydraulic considerations.

23 Q But ideally, if you
24 can locate it as close as possible to the gas pipeline
25 you save money and fuel in powering your pumping
26 stations.

27 A Yes, being very
28 careful about the proximity problem, of course.

29 Q Yes, and that's something
30 that we have heard a little bit about from Mr.

Lipsett, Wylie
Cross-Exam by Bayly

Hemstock with regard to, for example, the Great Bear River crossing, if you were to cross the Great Bear River, his geotechnical people and construction people say they would like to have a minimum 500-foot distance between the two crossings of the two facilities. Is that a number that you have heard, or that your company shares as a minimum distance?

A We haven't really dealt with the river crossing problems to the extent where we would identify a separation, a minimum separation between oil and gas pipeline crossings. But certainly no closer than 500 feet.

Q He referred to that one in particular because it's a river which is very difficult to cross except in a very few places, and you might well have to be almost that close.

A I think we're more likely to be several miles apart. As a matter of fact, in the brief studies that we have made of crossing that particular river, we are in fact several miles apart.

Q Now, your evidence seems to be partly based on a gas pipeline going up the Mackenzie Valley prior to the oil pipeline. Let's assume that for some reason that that doesn't turn out to be the case, that one of the Yukon or Alaskan projects gets the nod first, as Mr. Blair says it might, and an oil pipeline preceded a gas pipeline. What would be your next preferable supply of energy to run your pumping stations?

Lipsett, Wylie
Cross-Exam by Bayly

A In view of our current situation, I'm having a little trouble with your assumption; but --

Q Well --

A -- we would go to a liquid fuel preferably.

WITNESS WYLIE: If it was available.

WITNESS LIPSETT: When I say "a liquid fuel" I am referring now to middle distillates which we would probably manufacture ourselves.

Q Now, what about hydro power generated by water, is that something that you have considered?

A No sir. We have not, although conversations were held with the Northern Canada Power Corporation on this subject, and we got very little encouragement from them on the timing of such availability of such energy, so we didn't pursue it any further.

Lipsett, Wylie
Cross-Exam by Bayly

1 Q You say there was a plan
2 a foot at one time to put three dams in the Great Bear
3 River to provide hydro electric power and I wondered
4 if that was something that you had considered as a
5 source of power for your pumping?

6 A No sir, we had not.

7 Q Now on page 4 of your
8 evidence in answer to the second question on that
9 page, you talk about 11 considerations that have to do
10 with the location of an oil pipeline. I take it that
11 we could add perhaps to that, a twelfth one which would
12 be the power supply if it were the gas pipeline that
13 preceded the oil pipeline?

14 WITNESS WYLIE: A Yes, I
15 think we could add that to an additional item in there.
16 That's fine.

17 Q Could you say that again
18 please, because it's not coming through the microphone.

19 A That could be added as
20 an additional.

21 Q Yes. On the ones that
22 you have got, I take it that the first one, the location
23 of the reserves determines whether your oil pipeline
24 would go just to the Delta and directly offshore or
25 if oil were found for example off the north slope of
26 the Yukon, you might well consider applying to put a
27 pipeline into at least part of that corridor.

28 A I would suggest that in
29 a normal routing situation, you would look to where the
30 reserves are located. In this particular instance, our

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Cross-Exam by Bayly

1 terms of reference were with the Mackenzie Valley on
2 the east side of the Delta was a location for a gath-
3 ering system in our terminal, our initiating point of
4 the pipeline.

MR. HOLLINGWORTH: Excuse me
Mr. Bayly, I'm having difficulty following this con-
versation. I have great difficulty hearing Mr. Wylie
and I didn't even hear you when you mentioned the
point that could be added to the points listed on page
4. I wonder if you -- if Mr. Wylie could repeat what
that twelfth point would be?

A I think that Mr. Bayly suggested that the availability of fuel from a gas line could also have an effect on the routing. I said yes it could.

MR. BAYLY: Q In other words you wouldn't consider the other side of the river from a gas line, unless they were forced there by terrain considerations?

A That's a possibility.

Q And as you say, you would go to the sources of supply. I take it, it would be possible if oil were found off the north slope of the Yukon to bring that by feeder line rather than by trunk line unless there were such a large quantity that --

A It would depend on the
erves in one area versus the
ne the trunk line, yes, and

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Lipsett, Wylie
Cross-Exam by Bayly

1 Q And you're keeping, I
2 gather, or have been keeping close contact with what's
3 going on in this and the other Inquiries with regard
4 to reservations people have had about oil lines on
5 the north slope of the Yukon?

6 A Yes, we have.

7 Q Including the consultants
8 of the applicant, Arctic Gas?

9 A Yes.

10 Q Were you at the stage
11 of evaluating that as a possibility yourselves, that
12 is, using -- of using the north slope as a corridor
13 for an oil pipe line?

14 A No, we were not. We
15 were not charged with that responsibility at all.
16 They're not the terms of reference.

17 Q So you haven't enter-
18 tained any thoughts of bringing American oil from --
19 petroleum for or any other route across the north
20 slope of the Yukon?

21 A No sir.

22 Q That doesn't mean it
23 isn't a possibility, it's just not something you
24 consider?

25 A I would think if there
26 was a line built down the Delta, it would be an al-
27 ternative for shipment through the Alyeska.

28 MR. VEALE: I'm sorry. I
29 didn't catch the last comment you made Mr. Wylie.

30 MR. BAYLY: Could you repeat

Lipsett, Wylie
Cross-Exam by Bayly
Cross-Exam by Veale

that last answer please, sir?

A I believe you asked if we could anticipate some movement of north slope crew, and I said if a line was built down the Mackenzie Valley, that it could be an alternative to future discoveries on the north slope as opposed to moving through Alyeska but we have not studied that at all. Does that answer your question Mr. Bayly?

Q Yes it does. Those are all the questions I have. Thank you very much.

MR. GOUDGE: Mr. Veale, of the Council of Yukon Indians.

CROSS-EXAMINATION BY MR. VEALE:

Q Mr. Wylie, you spoke of on the same page, page 4 of these factors and the eighth factor is annual migration route. Did you make any specific studies in this regard other than what has already been done by Canadian Arctic Gas and Foothills?

A No sir, we did not.

Q And I take it that your final comment on page 6, that -- when you said an oil pipeline was compatible with the gas line in the Mackenzie Valley corridor, you were not in any way linking that up with corridors across the Yukon Territory?

A No, we were not.

MR. VEALE:
I have no further

questions.

MR. GOUDGE: Mr. Hollingworth
of, Foothills Pipeline.

Lipsett, Wylie
Cross-Exam by Hollingworth

1 CROSS-EXAMINATION BY MR. HOLLINGWORTH:

2 Q Mr. Wylie, I believe that
3 Imperial Oil has a major interest in Interprovincial
4 Pipeline, isn't that right?

5 A I believe that's true.

6 Q Do you know what percentage
7 that is?

8 A Just in round numbers, I'd
9 only be guessing, somewhere 30 percent I suppose.

10 Q And what about in Trans-
11 mountain Pipeline?

12 A A very minor interest.

13 Q And do Gulf or Shell have
14 any interest in either of those two pipelines?

15 A I think so. I do not
16 know the figures.

17 Q And of course Gulf, Shell
18 and Imperial Oil are all participants in the Arctic
19 Gas project?

20 A Yes, they are.

21 Q Now the idea of your
22 appearing here to speak to this concept, was, as I
23 understand it, to mesh the proposed gas pipeline with
24 any proposals no matter how vague they were with
25 the Beaufort Delta Project, just to see where they tied
26 in and what your plans were in relation to where gas
27 pipelines were going to go. Would that be a fair state-
28 ment?

29 A We're appearing here at
30 the request of Judge Berger and the Commission to give

Lipsett, Wylie
Cross-Exam by Hollingworth

our -- any information we have concerning a crude oil pipeline system.

Q Now you've stated in your previous testimony and answers to questions by counsel that the -- you stated in your previous testimony and in answers to questions by counsel that the proximity of a fuel supply for your pumping stations could have a bearing on your route?

A It could with other considerations, geotechnical and access to existing facilities. It would not be the single overriding factor.

Q No, but it's a point and it's also a point that you've mentioned on page 7 of Appendix I.

A Yes.

Q Point 2, point 3, point 29 that you're interested in a gas pipeline route?

A That's right.

Q And on your map, the maps that you've shown, you've shown a proposed corridor that the Beaufort, Delta route might take, and you've shown the proposed alignment of the Arctic Gas route.

A Yes sir.

Q You haven't shown the Foothills route?

A No sir, we haven't.

Q What's the reason for that?

A The main reason is it

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Cross-Exam by Hollingworth

primarily, I believe, follows the route of the Arctic Gas
one.

Q Have you checked into
that?

A No sir, we have not.

Q You haven't had dis-
cussions with Foothills to inquire about that?

A No sir.

Q Wouldn't it have made
sense to make inquiries and put that down as well?

Q You might also note that
we've included the highway on here.

Q Pardon me?

A I say, we also have
included the highway on here.

Q Yes, and which makes
the question all the more logical to me, why didn't
you include Foothills?

Lipsett, Wylie
Cross-Exam by Hollingworth

A It was not my direct intention to not include them, I suppose. They are an applicant. We could have included them. We did not include them.

Q In fact, sir, didn't you have discussions with Foothills in order to discuss the corridor phase and the evidence to come before this Commission in order to discuss the mutual problems of the company?

A Did I have discussions with them?

Q Wasn't it proposed to you, sir, that such discussions take place?

A It was proposed, yes it was.

Q And you declined that?
A I declined that because we had not established our overall corridor at that particular time.

Q But you've surely had discussions with Canadian Arctic Gas?

A Not directly, no. These have been picked up off of alignment routes that have been filed with not only the Commission here but in Ottawa with the National Energy Board.

Q So, you haven't had discussions with Arctic Gas?

A No, we have not.

Q Not any sort of discussions?

A No, sir.

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Cross-Exam by Hollingworth

1 MR. HOLLINGWORTH: Okay. I
2 have no further questions.

3 MR. GOUDGE: Mr. Steeves,
4 Canadian Arctic Gas?

5 MR. STEEVES: I have no
6 questions, sir.

7 THE COMMISSIONER: You're on.
8 You got on this.

9
10 Could I
11 ask why you say that--just taking ourselves back to
12 March, why do you say that this project of yours, at
13 a time when you assumed sufficient reserves of oil
14 to proceed, was dependent on the Arctic Gas proposal
15 apart from the fact that you have the same sponsors,
16 I understand that, but you weren't proposing to
17 duplicate their line across the north coast.

18 I think Mr. Wylie, you said
19 on page two, I think--maybe I've got you wrong there.
20 Did anybody know the passage I'm speaking of?

21 A I said that I thought
22 we would be--one of our assumptions was that we would
23 follow a gas pipeline. Is that what you're referring
24 to?

25 Q Yes, but I thought you
26 said--it's late in the afternoon and maybe I wasn't
27 following you. I thought there was a passage in your
28 evidence in which you said that the whole project was
29 dependent on the Arctic Gas project.

A No, sir. I think I said

Lipsett, Wylie
Cross-Exam by Goudge

that it was dependent--it was assumed for the purposes of our study and our application that a natural gas pipeline would precede this oil pipeline.

Q Right. Okay, sorry.

I misunderstood. Well, that's logical what you just said and I don't know why I got that other notion fixed in my head.

CROSS-EXAMINATION BY MR. GOUDGE:

Q Mr. Wylie, I take it that as a result of more recent information, there now appeared to be inadequate reserves to make your project immediately viable. Can you give us any estimate as to timeframes in the future when it might become viable or is that simply a hypothetical beyond purview.

A I could quote the recent Imperial Oil submission to the National Energy Board as to what their current thinking is and they are exploring in that area and if you'd care to have that quoted--

Q I'd be grateful if they had something to say on that issue.

A It refers to the Beaufort in this submission.

"Imperial's studies indicate that transporting oil from the Beaufort can most practically and economically be accomplished by pipeline. At least one billion barrels of economically recoverable oil must be found and delineated before an oil pipeline can be justified. We estimate about a seven year lead time is required

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Cross-Exam by Goudge

following establishment of this threshold
reserve level before production will begin.
Imperial's exploration experience and assessment
to date of the Beaufort Basin indicates that
this threshold will not likely be reached in
time to justify a pipeline by 1995. Therefore,
as a base case, no oil production has been
assumed during the forecast period to 1995".

Q And would that opinion
take into account the drilling presently being done
offshore in the Beaufort Basin?

A I'm sure it does.

Q If there were a line
built to carry oil along the present proposed Arctic
Gas route from Alaska to the Mackenzie Valley and
then down, would it become economic to transport the
minimum quantities of oil now found in the delta on
a piggyback? That is, is piggybacking oil as
economic as we're told it is for gas? I assume it is.

A You cannot piggyback
oil with natural gas.

Q No, but you can piggyback
it with oil?

A You can piggyback it
with oil if there was enough oil in Alaska or along
the Yukon coast. Certainly, yes.

Q Now, in developing the
programs that you did for your project, did you engage
in any examination of construction methods for an
oil line in the north?

Lipsett, Wylie
Cross-Exam by Goudge

A We were just getting into analyzing the construction methods, although we were well aware of the procedures and techniques used on Alyeska's system.

Q Is it your view that the construction of an oil line down the Mackenzie Valley would require an all-weather road, as it was used in Alyeska?

A No. We do not anticipate an all-weather road would be required to build an oil line down the Mackenzie.

Q It could be built off snow roads?

A Yes, sir.

Q I take it--well, let me ask this; the elevation of the line would be conducted with the use of vertical support members. Is that the terminology?

A Yes, sir.

Q And those pieces of equipment require technology that can be used on snow roads?

A Yes, sir.

Q In general, is the building of an elevated line in that way more labour intensive than the building of a buried line?

A Our initial indications are yes, it is more labour intensive.

Q Is there any way of quantifying that? Is it twice as labour intensive?

Lipsett, Wylie
Cross-Exam by Goudge

A Now, here again, we were just getting into that and I cannot quantify it for you.

Q The reason I ask is that I read in the newspapers the large numbers involved in building the Alyeska project and I wonder whether those large numbers are necessitated simply through it being an oil line requiring the vertical support member technique?

A Well, it would certainly add to the normal pipeline spread contingent. There is some slight reduction because you're not using some other pipeline equipment, but I think in general you can suspect there will be an increase in the number of people employed.

THE COMMISSIONER: Well, when the Alyeska project was first proposed, the proponents said they would need about six thousand to eight thousand people to build it, but then they assumed they could bury it. Soil tests over a period of years led them to the conclusion they had to elevate most of it which is the way it's being built now and that we are told is one of the principal reasons why there are twenty-four thousand, not six thousand people employed building it.

I think the other factor was that the terminal at Valdez, they found they had to hire a lot more people than they expected. I'm drawing on my recollection of the evidence of Mr. Boorkman who was called by Arctic Gas and the evidence of other

Lipsett, Wylie
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1 Alaskan witnesses, but I can--when you take a look
2 at those elevated support members in Alaska, you can
3 see that you need a few people to put them up.

4 MR. GOUDGE: What about
5 gravel usage, Mr. Wylie or Mr. Lipsett? Is the
6 gravel usage in the construction of an oil line more
7 than or less than the gravel usage required for a gas
8 line?

Lipsett, Wylie
Cross-Exam by Goudge

A Well, that one is very difficult to answer. As Mr. Lipsett indicated earlier to Mr. Bayly, we were very early in the game in trying to determine what was above-ground or what we could anticipate as being above-ground, and what would be below-ground, and we were also at the point of saying what could we construct in the wintertime and what could we construct in the summertime, which had two different gravel requirements?

In addition to that is what is our location? What is the availability of access roads that would be already there? Would we have to build additional access roads, and that analysis has not been arrived at yet. The only perhaps indication of the magnitude of gravel that might be required in any particular operation, and George, I think, can verify this for me, per mile of the pad if we had to use a pad for the construction we'd use in the neighborhood of 40,000 cubic yards, that's assuming about 48 feet wide by five feet and four feet in depth, four or five feet in depth. An access road, on the other hand, some 24 feet by four feet in depth would require somewhere around 30,000 cubic yards per mile. That's approximately the level at which we arrived at this stage.

Q Yes. Had you arrived at a decision, did you say, as to how much you would be building in the summer and how much you would be building in the winter?

A No, we have not.

Lipsett, Wylie
Cross-Exam by Goudge

Q I take it you contemplated major pipe-laying to be done in the winter both for buried and elevated portions of the line, and perhaps facilities like river crossings could be built in the summer. Is that generally the approach you were taking?

A We were hopeful that our analysis would show that we could construct certain portions of the line in the summertime.

Q Off a gravel work pad.

A Off a gravel, or if the conditions warranted it, right off the ground itself at certain locations.

Q Is a gravel work pad necessary to construct an elevated line?

A No, I don't think so, if we -- and we believe you can construct a pipeline elevated in the wintertime off a snow road.

MR. GOUDGE: Thank you. Those are all the questions I have, sir.

I should say before I close, sir, that these gentlemen and Mr. Campbell are here at our request and we really are grateful for their presence.

THE COMMISSIONER: By the way, the Mackenzie Valley Research were proponents of an oil pipeline in the early '70s, calculated they would need 30 million cubic yards of gravel to build that pipeline, and that is essentially the same figure Arctic Gas has given us regarding the gravel they

Lipsett, Wylie
Cross-Exam by Goudge

1 say they will need to build their gas pipeline. I'm
2 really saying that for Mr. Goudge's benefit and the
3 Inquiry staff who review these transcripts. I'm not
4 suggesting --

5 WITNESS LIPSETT: If I might
6 make a comment, Mr. Commissioner. Those numbers were
7 based on assumptions that are quite different than the
8 assumptions that we have made. First of all, they
9 had assumed that they could bury a great deal of that
10 line. Secondly --

11 Q They'd assumed what?

12 A They had assumed that
13 they could bury a great deal of that line, much more
14 than I think is actually possible. Secondly, they had
15 planned, as Alyeska has done, to work from a gravel
16 work pad, and therefore the volumes were necessarily
17 higher than what we would contemplate.

18 THE COMMISSIONER: Right,
19 thank you. Well, thank you, Mr. Wylie and Mr. Lipsett.
20 We certainly appreciate your taking the trouble to
21 come up here before closing the doors, and I think it's
22 appropriate that we should have heard from you before
23 we completed our work. We're closing our doors next
24 Friday and the evidence you've given us is valuable and
25 it certainly allows us to conclude our work, confident
26 we haven't overlooked the work of your group. So
27 thank you again.

28 WITNESS WYLIE: Well, thank
29 you sir. I'm hopeful that the information we have been
30 able to furnish you is useful and timely.

(WITNESSES ASIDE)

1 THE COMMISSIONER: Well,
2 thank you, and thank you, Mr. Campbell.

3 Well, does that conclude --

4 MR. GOUDGE: Sir, I would
5 propose that we begin tomorrow at ten o'clock.

6 THE COMMISSIONER: O.K., fine,
7 ten o'clock then.

8 (QUALIFICATIONS & EVIDENCE OF MESSRS. LIPSETT
9 & WYLIE MARKED EXHIBIT 840)

10 (PROCEEDINGS ADJOURNED TO OCTOBER 7, 1976)

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